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ORIGINAL ARTICLES.

LACERATIONS OF THE FEMALE SEXUAL ORGANS CONSEQUENT UPON PARTURITION: --THEIR CAUSES AND THEIR PREVENTION.

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My object in appearing before you, as stated in the programme, is to read a paper on lacerations of the female sexual organs consequent upon parturition. It may seem odd, if not impertinent, to those of you who do not know me intimately, that I should venture to discourse upon such a subject so essentially in the hands of specialists; but they will perhaps pardon me if I tell them that, although I have all my professional life, now extending over a period of fifty-six years, been a general practitioner, yet during the first third of a century of that life I was more or less extensively engaged in obstetric practice; while during the last third I have had more or less to do almost daily with the treatment of female diseases requiring the use of the speculum and operative interference of various kinds. I have performed ovariotomy, and on numerous occasions sutured the perinæum and the vesico-vaginal septum with a degree of success, if not highly flattering, at all events respectable. Within a short time after my entrance into the profession, I translated Hatin's *Manual of Obstetrics*, a small volume which had an extensive circulation in its new dress; in 1839 I contributed several pages in my work on *Pathological Anatomy on Uterine Moles*, founded upon original observations and dissections; and in 1854 I unearthed, after much labor and research, Ephraim McDowell's claims to the fathership of ovariotomy, up to that period generally ascribed to other sources. Moreover, as a writer on systematic surgery, compelled to keep abreast with the knowledge of the times, I have embodied in my treatise an elaborate chapter on the diseases and injuries incident to the genital organs of the female sex, reflecting, at least in some degree, an outline of the existing state of the science. I make these remarks, in anticipation, as a justification for bringing before the Section a subject which, in some of its relations, has been so often and so elaborately discussed by many of the ablest men all over the civilized world. I might have taken my budget before the Surgical Section, but believing that fairer justice would be meted out to it here, I have given it this direction. When I shall have finished my task I trust you may not be able to say with Appeles, "*Ne sutor ultra crepidam;*" but rather incline to Tacitus, "*Nihil scriptum miracuti causa.*"

It is astonishing how much has been written on the treatment of these lesions, and how little has been said upon their causes and prevention. Operations almost innumerable have been devised for their relief; volumes have been written upon the subject, and everywhere, in town and city, the gynæcologist is ready to offer his services in sewing up lacerations of the genital organs of maltreated and unfortunate women. Seldom do we hear the voice of any of them raised in behalf of preventive measures, and then only in an indirect or roundabout manner. I am here this evening, not to wrestle with shadows or imaginary demons, but with stern realities, and to speak the truth, the whole truth, and nothing but the truth, as I understand it. The time has arrived when this matter should be met in a bold and fearless manner.

The lacerations of which I desire to speak are those which affect—(1) the perinæum; (2) the vesico-vaginal septum; (3) the recto-vaginal septum; (4) the neck of the womb; and (5) the urethra, or mouth of the urethra and of the vagina. A few remarks under each of these heads will suffice for my purpose.

Laceration of the perinæum is of frequent occurrence, and cannot always be avoided even under the most judicious management. In primiparæ, the fourchette is almost invariably ruptured, especially when the tissues are unusually rigid, and the protruding structures are very large, or very rapid in their descent, or where the perinæum is not properly supported. Fortunately, such an occurrence is of little moment, as it respects the patient's welfare, either present or prospective. But it is very different when the rupture is extensive, involving a large portion of the perinæum, or perhaps extending—as not infrequently happens—through the sphincter muscles of the anus and the lower extremity of the vagina. Then such an accident constitutes a great evil, and demands more or less skill for its cure.

Lacerations of the vesico-vaginal septum are among the saddest of calamities, entailing, if not

successfully remedied, endless suffering upon the poor patient. I know of nothing more calculated to excite our sympathy, or to enlist the noblest qualities of our nature. In the worst forms of such accidents, in which science and skill offer no relief, as occasionally happens even in these enlightened days, death would be a welcome visitor. Equally distressing is a recto-vaginal fistula, or a rent with loss of substance in the urethra.

Lacerations of the neck of the uterus, even when comparatively slight, often entail great suffering, local and constitutional; the former manifesting themselves in various kinds of pains and discharges, and the latter in almost every form of nervous disorders of which it is possible to form any conception, together with more or less derangement of the digestive and assimilative organs. Of the frequency of these accidents, an idea may be formed when I state, what has long been known to most of you, that one of our most distinguished native writers on gynæcology has expressed his conviction that rupture of the neck of the uterus, in greater or less degree, is almost inseparable from a first labor. Whether Dr. Emmet is correct in this conclusion is a question which remains to be determined. If it be true, it would inevitably go to prove that God has made woman much less perfect than the world has given him credit for. As childbirth is one of the special prerogatives of woman, designed to perpetuate the race, there is something peculiarly distressing in such an idea. Looking at the matter from a practical standpoint, one would naturally conclude that the Author of our being had constructed the womb with special care to protect the organ, at least as a rule, against the possibility of a contingency fraught with such sad consequences. If we assume the correctness of Dr. Emmet's statement, we may well wonder, without irreverence, why Almighty God did not create simultaneously with woman a competent gynæcologist, ready to meet this inevitable evil, for such unquestionably it must be whenever it occurs. If this evil is the outgrowth of civilization, then the sooner we get rid of this civilization the better will it be for our poor wives and daughters, considered as procreating beings.

It was a happy circumstance when, in 1851, Sir James Y. Simpson first called attention to this important subject. It was like the discovery of a new world in human progress. In the *Proceedings of the Edinburgh Obstetrical Society*, for January of that year, he proclaims the important truth, until then unknown, or only guessed at, that fissuring and laceration of the cervix are not, as had been generally believed, rare lesions during labor, but, on the contrary, very common occurrences, especially in primiparæ, and he supports his views, not only by what he saw with the aid of the speculum, but by an appeal to autopsies in which rents and fissures were detected in the mouth and neck of the uterus after natural labor. The facts thus pointed out by the great Scotch professor were afterwards—namely, in 1869, and again in 1874—brought more fully before the profession by Dr. Emmet, in two important papers published in the *American Journal of Obstetrics*, where they soon attracted general attention. To these two distinguished men, then, are we mainly indebted for the knowledge which we now possess upon this important subject; knowledge of priceless value to suffering woman, and of the greatest consequence to the obstetric practitioner.

If we inquire into the exciting *causes* of these accidents, it will be found that they vary with the situation and structure of the parts involved in them. The great factor in laceration of the perinæum is parturition, either alone or in conjunction with the means employed to effect it. When this wall to the outlet of the pelvis is very rigid, and the action of the uterus unusually vigorous, forcing down the head of the child with great vehemence, it is easy to conceive not only of the possibility, but of the great likelihood of such an accident, especially in the absence of proper support. In such a condition the perinæum is very much, to use a figurative expression, in the position of the door of a room, with a big, burly fellow on the inside, knocking for egress. To carry out the simile, he does not in every case batter down the whole of the opposing obstacle, but only a portion of it, representing a comparatively slight laceration, as where the fissure is limited to the fourchette, or to the anterior portion of the perinæum, while, when the resistance is extreme, the entire wall is torn, the lesion extending, through the sphincter muscles, into the rectum; in other words, the entire door is battered down, and the vagina and bowel are laid completely open.

Of the various kinds of lacerations of the vagina, or of the vagina and the uterus, constituting what are known as fistulæ of the bladder, or of the rectum, those dire calamities which form so prolific a field for operative interference, the most common factor unquestionably is either prolonged or very severe pressure. "This is," says Thomas, in his able work, "beyond all doubt, the most prolific source of the accident, though it may also attend a rapid labor in which the vagina has been pressed against some point of the pelvis with great violence." The active agent of this pressure is generally the child's head, especially when it is disproportinately large or wedged in behind the pubic symphysis, unduly compressing the vesico-vaginal septum, followed by destructive inflammation and sloughing. The accident is generally the result of protracted pressure, as when the child's head has been wedged in in this position for many hours, neither, perhaps, receding nor advancing; or it may be caused in a very short time, as when the pressure is unusually concentrated and severe. If the pains are very violent, the pressure of the presenting parts may be so great as to end in actual rupture of the vesico-vaginal septum, but, as a rule, the opening is the direct result of concentrated pressure, eventuating in inflammation and sloughing, precisely as in an ordinary bedsore. Vesico-vaginal fistulæ are not infrequently produced by the pressure of the child's head upon a distended bladder. How far the maladroit use of the forceps, vectis, or other instruments may be capable of producing such lesions, will form the subject of future inquiry.

The principal causes of lacerations of the cervix

are precipitate labor, labor attended with rigidity of the mouth of the womb, and instrumental labor. Lacerations are not uncommon in breech cases, in which delivery is obliged to be expedited on account of the retained head before the cervix is properly dilated. These are unquestionably the most frequent and efficient factors in the production of accidents in this situation. If to these we add the presence of cicatricial tissue in the cervix, malpresentations, and section of the cervix, as occasionally practised by ignorant obstetricians, we have a complete list of all the causes, active and predisposing, of rupture of the uterus during normal parturition. A premature discharge of the amniotic fluid acts mainly, I presume, as a means of retarding labor than as a cause of laceration of the cervix. I must not omit to allude here to a statement of Dr. Emmet that laceration of the cervix is of frequent, if not common, occurrence in cases of criminal abortion. I do not know that this fact has been noticed or verified by other observers, but of its truth I entertain no doubt. In his tables, Dr. Emmet gives ten cases of this kind, and he declares that he has met with this accident in every instance where the woman admitted the fact of exposure to malpractice.

Having thus briefly discussed the situation and causes of the accidents in question, let us, in the next place, inquire into the best means of preventing them, the chief object which I have had in view in bringing this matter before you to-day. There is more honor in one ounce of preventive midwifery than in one pound of curative gynæcology, the outgrowth of ignorant or meddlesome obstetric practice. That many of these occurrences are inevitable without any just blame attaching to the professional attendant is well known to every practitioner of the least experience, but that they may, as a rule, be prevented by the exercise of proper care and skill will, I think, be readily admitted; at all events it is true.

The great remedy, as laid down in the books, for rigidity of the perinæum is manual support during the descent of the child's head, or whatever else the presenting parts may be; this, as a rule, is quite sufficient; but not so when the resistance is very great. In this event, the accoucheur is expected to make use of the hot bath and of hot fomentations, to anoint the parts with oil, and even, in extreme cases, to make slight incisions on each side of the middle line. Nothing is said in these injunctions of the abstraction of blood as a means of relaxing this tense, resisting wall which so obstinately stands in the way of the completion of the parturient process. What are the active agents of this resistance? Unquestionably the muscles of the perinæum, the sphincters of the vagina and anus, the transverse muscles, and the elevator muscles of the anus. The skin and connective tissue offer no obstacle. The whole difficulty resides in the muscles, and its amount is precisely in proportion to their development, great in strong, young, robust women, and comparatively slight in those of an opposite character. If this statement be correct, and no one can doubt it, it follows, as a necessary corollary, that the obstacle is most readily overcome by some measure that will relax the perineal muscles. Hot water, oil, and medicated unguents will not do this, and no sane man would wait for the tardy and uncertain effect of local bleeding. A far better plan is to take blood at once from the arm from a free orifice in one of the large veins, the patient sitting up in bed during the operation, so as to produce the most rapid and decided impression at the least expense of the system. If there be anything better than this, anything more likely to answer the purpose, I am not aware of it. The loss of ten, twelve, sixteen, or even twenty ounces of blood can do no harm in such a condition of things. A few days under proper treatment always suffice to replace it, while, as a rule, it promotes rather than retards recovery, by rendering the woman less liable to puerperal fever, peritonitis, and pelvic cellulitis.

In regard to lacerations of the vesico-vaginal septum, much may be done in the way of prevention, and so also in regard to rents into the rectum. It is self-evident that anything that lessens the size of the canal through which the child is to pass, or that seriously interferes with the descent of the child's head, must act as an impediment to delivery. All obstetric teachers are aware of this fact, and hence they take special pains to instruct the young practitioner to see that the rectum is well emptied during the latter stages of pregnancy, or, at all events, on the approach of labor, and that the urine is evacuated from time to time as the labor progresses. These precautions are unquestionably most important safeguards, and, if duly attended to, are rarely followed by serious injury. If, on the contrary, they are neglected, as I fear is not infrequently the case, especially among the lower classes of women, it is easy to conceive that the consequences must be of the most direful nature, especially if, superadded to these obstacles, there is an impacted condition of the child's head along with violent uterine contraction. Under such circumstances it is difficult to conceive how the poor patient could escape injury in some form or other. The machinery must break down somewhere. A few hours may suffice to do the mischief. The only remedy, of course, is the forceps or crotchet, and the former cannot be applied too soon. The bladder must be liberated, or a vesico-vaginal opening, if not something worse, will be the inevitable result.

The proper remedy for the relief of the stationary head, whether impacted or simply arrested by the inertia of the womb, is—provided the cervix is sufficiently dilated, or dilatable—the forceps, that "noble instrument," as it was called by Chapman, who, in 1733, published the first account of it, upwards of one hundred years after its invention by Paul Chamberlen, of England. I shall not speak of the numerous modifications which this valuable instrument has experienced in the hands of the obstetricians, or detain you by asking whether the long instrument is preferable to the short, or the short to the long. In the hands of the judicious practitioner, each has a distinct and separate value; but it will be pertinent to the object of this paper to inquire into the reasons which have led to the great changes which have taken place in regard to the frequency of its use.

Beginning with the great Baudelocque, the most

illustrious accoucheur of the last century, we find that he applied the forceps once in 561 cases; Clark in 728; Collins in 617; Lachapelle in 293; Baer in 274; Boivin in 214; Davies in 53; Naègle in 31; Kluge in 16; Carus in 14, and Siebold in 7.[1] Smellie, who flourished in the middle of the last century, and who was the most famous accoucheur in his day in Great Britain, applied the forceps once in 125 labors; and Merriman, another distinguished English obstetrician, once in 93.

From the late Dr. Churchill, of Dublin, we learn that in Great Britain, until recently, the forceps were employed once in 249 cases; in France, in 140; and in Germany, in 106.

In this country, the present fashion is to apply the forceps very frequently, both in private and in hospital practice. Some of my friends inform me that some accoucheurs resort to the instrument as often as once in four labors; others in 6, 8, or 10. Whether the forceps are employed as often in Great Britain and on the Continent of Europe, I am unable to say; but the difference, if any, must be very trifling.

Dr. William P. Dewees, who was the great Philadelphia accoucheur in his day, and who delivered upwards of ten thousand women, writing in 1843, holds the following language in regard to the use of the forceps: "However strongly I may be impressed with the utility of the forceps, I should not feel myself warranted to use them as often as they appear to be in Great Britain and on the Continent of Europe. The frequency with which they have been employed in some instances is really alarming, and, I had like to have said, must have been too often unnecessary. In my own proper practice, I have not employed them oftener than once in 350 cases, though I have been under the necessity of using them very frequently in the practice of others."[2]

Notwithstanding that Dewees so seldom employed the forceps in his own cases, we nowhere find that he had any serious lacerations of the genital organs. In the tenth edition of his *Treatise on the Diseases of Females*, published in 1854, "with the author's latest improvements and corrections," not one word is said upon the subject, not even upon rupture of the perinæum. Now, if such accidents had occurred under his observation he could hardly have failed at least to mention the fact. If I am told that Dewees did not use the speculum, and could, therefore, not detect them, I reply that he had eyes to see, and fingers to feel. He certainly could tell what the nature of the case was when urine or fecal matter flowed off by the vagina. Philadelphia's great accoucheur, Dr. Ellwood Wilson, has superintended, as he informs me, 10,600 cases of labor at the Lying-in Hospital in that city, without the occurrence of a solitary instance of vesico-vaginal, or recto-vaginal fistula. He, like others engaged in large private practice, has witnessed numerous atrocities in consultations. The testimony of my late colleague, Professor Ellerslie Wallace, is precisely of the same import.

In a discussion of the admirable paper of Dr. Emmet, "On the Necessity for Early Delivery, as Demonstrated by the Analysis of 161 Cases of Vesico-vaginal Fistula," read before the American Gynæcological Society, in 1878, Dr. D. Humphrey Storer declared that, in an experience of several thousand cases of midwifery, he had witnessed only two cases of vesico-vaginal fistula, adding that there was no man in Boston who applied the forceps less seldom than he. He approved of the employment of the forceps in certain conditions of labor, "but the idea," he remarks, "that the forceps is an instrument which must be almost constantly used is, I think, a dangerous one." This sentiment was elicited by the statement of Dr. Emmet that the great factor in the production of vesico-vaginal fistula is impaction and long detention of the child's head, aided by distension of the bladder, and the assertion that instrumental delivery has rarely, if ever, any agency in the production of this sad occurrence.

Dr. H. P. C. Wilson, of Baltimore, on the same occasion, asserted that he had made it a rule for many years, when called to a case of labor, to carry with him a bottle of chloroform and a pair of forceps, adding that he had frequently used the forceps when he was certain that the woman would be delivered safely by nature, simply to shorten the labor and to relieve suffering. Dr. John L. Atlee, in referring to Dr. Wilson, said, "the older I grow the more apt I am to employ the forceps." In opposition to these sentiments, I take leave to cite the views of America's latest writer on obstetric medicine, Dr. Lusk, as expressed in his admirable treatise, *The Science and Art of Midwifery*, the second edition of which was issued only a few months ago. "I can only say," declares this excellent author, "that, with increasing experience, my own practice has grown more and more conservative, and my own belief is that true wisdom requires us to abstain from even trivial operations, so long as nature is able to do her work without our assistance."

Is it not a fact, I would ask, that the forceps are often used merely as a means rather to save the time of the accoucheur, than as a means to prevent the suffering of the poor woman; to enable him to meet another engagement, to visit the theatre, or to attend a dinner or an evening entertainment? Passing along the streets, not long ago, said Dr. Goodell to me a few months since, my eye lighted upon a gentleman walking rapidly on the opposite side, who, the moment he recognized me, shook his green bag at me, exclaiming, "reed-birds for supper," and hurried on.

I take leave here to quote what I deem eminently pertinent to this part of my paper, a passage from a communication that appeared in the New York *Medical Record*, March 8th of the present year, from the pen of Dr. A. E. Dugas, of Augusta, Georgia: "When I graduated in 1875, an old sage in the profession advised me as follows: 'My boy,' said he, 'I am an old man; I have practiced over fifty years, and, as you are aware, have been very successful. In regard to your labor cases, I would give you the following advice: First, as you intend practicing in the city, make it a habit of leaving

[1] Robert Lee's Table, in Lectures on Midwifery.

[2] Midwifery, p. 292.

your forceps at your office, for if you ever require them, you will always have ample time to send for them, and your not having them with you may save some women much trouble. Second, do not examine your patient much or often; see that things are right, and then let nature manage the case.'"

The "old man" here alluded to is no less a personage than the great and venerable Dr. Louis Alexander Dugas, a man of vast experience as a practical surgeon and accoucheur, and emphatically one of the sages of our profession. How wise such advice is in contrast with the accursed practice of the day, when every obstetrical fledgeling thinks himself competent to use the forceps, and is anxious to get to his "reed-bird supper," I leave you to judge.

If all accoucheurs were well educated and well versed in the use of the forceps, there might be some justification for the frequency with which they are applied at the present day. There might even be some justification in hitching them on the child's head, when nature is fully equal to her task, to get home in time to a good supper; but to use them on the slightest pretence, as is so often done now-a-days by every sciolist, hardly out of his swaddling-clothes, is, if you will allow me to say it, simply damnable. Surely our obstetric teachers have a great deal to answer for in sending forth every year armies of incompetent young accoucheurs. Surely they commit a grave sin when they teach the frequent application of this "noble instrument," employed far too seldom in former times, as it is certainly employed too often in ours. In conversing recently upon this subject with a distinguished obstetric teacher, now retired, he said to me, "I always enjoined it upon my pupils, after pointing out to them the uses and abuses of the forceps, to carry the instrument with them to every case of labor, adding that it was just as important as it is for the mariner to carry his compass with him to sea." Without wishing to disparage the judicious use of the forceps, which I have no right to do, and which God forbid I should do, I think a careful consideration of the case justifies me in endorsing the opinion of Baudelocque, uttered more than a century ago, that the forceps, as generally used, have done more harm than good, and in this view I am glad to be able to say that I am sustained by many eminent, able, and experienced obstetricians and gynæcologists of the present day.

That many accidents happen for the want of a proper use of the forceps, or of their timely application, is proved by the numerous cases of vesico-vaginal and other fistulæ, and by the still not infrequent sacrifice of the child, if not also of the mother; of the former by fatal compression or craniotomy, and of the latter by exhaustion, heart clot, pulmonary obstruction, or other causes. It would be difficult to find in all the records of obstetric medicine a case which more sadly and forcibly illustrates the baneful effects of the want of the proper use of the forceps than that of the Princess Charlotte, whose death, in 1817, threw the whole British nation into mourning. The amniotic liquor had been discharged early in the labor, and although the head had long been in the lower strait, the delivery, which took place at the end of fifty-two hours, was intrusted entirely to nature's efforts. No wonder that the child was still-born, and that the poor woman, exhausted by her protracted labor, expired soon after her delivery. No wonder that her principal accoucheur, Sir Richard Croft, committed suicide as the best remedy for his sad blunder and consequent mortification!

I come, in the third place, to inquire briefly into the proper preventive treatment of lacerations of the cervix. We have said that these injuries are most common, by far, in primiparæ, especially when pregnancy occurs in women somewhat advanced in life. Spiegelberg found that the average duration of labor in 506 primiparæ was 17 hours, and 12 hours for multiparæ. After the thirtieth year, the duration is materially increased, amounting, according to Hecker, in primiparæ, to twenty-one hours, and, according to Ahlfeld, to twenty-seven hours.[1] If we ask what is the cause of this difference in the duration of labor in primiparæ and multiparæ, we shall find a ready answer in the difference in the pliancy and softness of the genital organs, and in the fact that the way is paved by the previous parturition. In primiparæ, especially in elderly ones, the genital organs are hard, firm, inelastic, unyielding; in multiparæ, on the contrary, they are comparatively soft and dilatable, yielding readily before the advancing head. In the one case the labor is comparatively easy, rapid, and safe, both to mother and child; in the other, painful, protracted, and fraught with danger; the uterus and perinæum, not to mention the vaginal septa, are liable to be torn, and the child often perishes from injury inflicted upon its head and lungs. If, in such a labor, delivery be attempted with the forceps before the parts are properly relaxed, or if attempts be made to dilate the parts forcibly with the fingers, it is easy to perceive that rupture, of a more or less serious nature, must inevitably happen.

Since the attention of accoucheurs was first directed to the frightful frequency of lacerations of the cervix in primiparæ by Simpson and Emmet, the subject has assumed a degree of importance previously undreamed of, and the question naturally arises here: How are these injuries to be avoided? How are we to abridge the duration of labor in primiparæ, and to place them on the same level with the multiparæ? There is but one way to accomplish the object, and that is by the employment of relaxing agents. It is a well-known fact that labor is more easy in hot than in cold climates, a circumstance that would naturally lead us to employ hot applications, as the hot bath, hot fomentations, and hot injections. I will not deny that such agents might occasionally do good, but what sense is there in parboiling a woman when we have at hand other agents far more speedy and more efficacious in their action. I do not allude here to chloral, ether, chloroform, and tartar emetic, the latter of which, from its tendency to produce vomiting, could hardly in any case be a safe remedy, while the former, with some advantages, would seldom prove reliable to bring about the desired result. The great remedy which I have in my mind's eye is vene-

[1] Lusk, Science and Art of Midwifery, p. 134. Second Edition, 1884.

section, carried to a reasonable but sufficient extent to relax the system and through the system the genital organs. I do not introduce this as a new remedy, for general bleeding to overcome rigidity of the uterus and perinæum was practiced long ago, and is still practiced by many of our older physicians under such circumstances; but I desire to recall attention to it as the most prompt, powerful and efficacious of all the agents that the accoucheur can press into his service for the attainment of this end. I am not abashed if I am told, at the very threshold of this announcement, that venesection is an obsolete art, that none but old fogies would think of employing it, and that the blood during pregnancy undergoes such great changes as to render the loss of it, except in puerperal convulsions, an improper expedient during labor with a view of expediting it.

There was a time when this agent was very generally, I had almost said, universally used, even in my early days, in great rigidity of the sexual organs; fortunately, that day has gone by. But if the lancet was used too much then, it is certain, at least to my mind, that it is not used enough now. We are too apt, as a profession, to be influenced by prejudice, especially when it is backed by great authority. When the wether jumps, the rest of the flock are sure to follow. I recollect when it was customary to bleed pregnant women for the relief of headache, dizziness, or vertigo, pulmonary congestion from aortic obstruction, and pelvic and sacro-lumbar pains. The "false pains," as they are termed, often so harassing and worrying as to be a source of real suffering, may generally be promptly relieved by the abstraction of eight, ten, or twelve ounces of blood; and who would not bleed, bleed freely, when a plethoric pregnant woman is threatened with convulsions? To withhold the lancet in such a condition would simply be criminal, and yet some obstetricians, even of world-wide renown, would content themselves with the exhibition, in such an event, of chloroform, of chloral hydrate, or of both articles combined.

If I be told that a pregnant woman should not be bled because, while in this condition, she experiences a marked decrease of the red corpuscles of the blood, I answer that this would be simply begging the question. If this were the only change which this fluid undergoes to meet the physiological necessities of the system during utero-gestation, there might be some reason for such a conclusion. But this is not the fact, for, while there is a marked diminution of red globules, there is also a marked increase of fibrin and albumen, assimilating the mass of this fluid to the condition in which it is found to be in inflammation. Instead, therefore, of using these changes as an argument against the use of the lancet, they afford the strongest possible evidence in favor of it whenever a powerful relaxant is required to facilitate parturition. May plethora not be caused by the presence in the blood of an undue proportion of its fibroid, albuminoid, and aqueous constituents? Blood is formed rapidly in pregnancy, to meet the demands of the system, and it is not at all necessary to perform experiments on bitches to prove what daily passes under our observation in the human subject. The great strength, the exuberant health, the florid cheek, and the genial warmth diffused throughout the entire system, sufficiently attest the presence of an active circulation, with an abundance of red globules, although they may be relatively fewer than in the non-pregnant state. No rational accoucheur would bleed an anæmic woman, or a woman laboring under cardiac disease, aortic insufficiency, chronic malarial fever, or any wasting malady whatever. Such affections point out their own remedies—supporting, and not depleting measures.

There is an idea, almost universally prevalent, that the people of the present day do not bear loss of blood as well as they did forty, or even twenty, years ago, an opinion which has exerted such an influence upon medical men, as well as upon the public at large, that venesection has become an obsolete operation, or an operation which is, at most, limited to a few old fogies—as they are sarcastically styled—ignorant of the benign progress of the healing art, and of the tolerance of the system. Whether this opinion be true or erroneous, this is not the time or place to inquire; suffice it to say that my solemn conviction is that the neglect into which this operation has fallen, not only in midwifery, but in general practice, is the cause, annually, of the loss of thousands upon thousands of human lives that might otherwise be saved.

If I were asked under what circumstances a pregnant woman, in sound health, without any complications, ought to be bled, I should answer, first, when she is threatened with abortion, miscarriage, or convulsions; secondly, when there is a rigid os, obstinately refusing to yield after the labor has been in progress for six, ten, or twelve hours; thirdly, as a rule, in tardy labor in primiparæ, especially after the age of thirty; fourthly, where there is, so to speak, rigidity of the general system, including, of course, the sexual organs; fifthly, when there is a decidedly feverish condition of the system, associated with severe headache, great heat and dryness of the genital organs, a rigid os, or os and perinæum, and inefficient, teazing labor-pains; and, lastly, in torpor of the uterus from the effects of inflammation, gout, or rheumatism, interfering with or retarding delivery. In all, or, certainly, in most, of these conditions, I should follow up the effects of the bleeding with an anæsthetic, or a hypodermatic, injection of morphia. I solemnly believe that, if these rules were properly observed, the process of parturition would be greatly facilitated, the pains of labor materially abridged, and the risks of lacerations, which now stand as such a blot upon obstetric practice, would be reduced to the merest minimum, not to say anything about the much greater safety of the child, and the more rapid recovery of the mother.

As to the quantity of blood to be abstracted, every case must be met on its own merits. While in some instances the loss of a few ounces may suffice, in others, especially in strong, robust, plethoric women, sixteen, twenty, or even thirty may be required. Dr. Dewees, to whom is justly due whatever praise or blame attaches to this practice, occasionally bled to the extent of forty ounces before he succeeded in overcoming the rigidity of the os. Sometimes,

indeed, he carried the operation even to syncope; always placing the patient in the erect or semi-erect position, so as to expedite and increase the effect.

Dr. Dewees informs us that he was led to adopt the employment of general bleeding in midwifery, near the close of the last century, from having witnessed its beneficial effects in the practice of Dr. Physick, in relaxing the muscles in dislocations of the shoulder-joint.

Out of the injuries now considered, often unavoidable, but in the great majority of cases the effects of gross ignorance, timidity, indecision, or the maladroit use of the forceps and of other instruments, has grown gynæcology, a twin sister of surgery, the scientific foundation of which was laid hardly thirty years ago by the immortal Sims, aided by Bozeman, Thomas, and Emmet, of America, by Baker Brown, of London, and by Gustav Simon, of Heidelberg, all pioneer laborers in this great field of the healing art, now trodden by many thousand feet, and illustrated by special treatises and contributions alike honorable to their respective authors and creditable to their respective countries.

DISCUSSION.

Dr. Battey, of Georgia.—Mr. Chairman: I would like just one moment to put myself upon the record in confirmation of one of the views by our late lamented associate of this Section, and it is this:

Although a very much younger man than Dr. Gross—very much younger—the summing-up of my obstetrical experience is (to put it in a word), in looking back over it, in not a single instance have I regretted the use of my lancet in obstetrical practice. In many, many instances, as I now recall them, I think that positive good would have grown out of the more frequent use of it. I bleed, sir, still.

Dr. H. F. Campbell, of Georgia.—Mr. Chairman: I am glad of the opportunity of being able to discuss a paper, the principles of which, perhaps, would meet with no commendation from many, no matter how much we venerate the illustrious man who honored this Section with his last contribution. I am glad that I entertain views so entirely consonant with his. I am glad that my friend from the same State as myself (Dr. Battey) agrees, to a great extent, in the few remarks that he made, with myself.

Blood-letting in labor, blood-letting especially in puerperal eclampsia, has, in my opinion, been most unjustly laid aside, most unjustly condemned. Let us look back and see what has been given us in the place of blood-letting—chloroform, chloral, bromide of potassium, and a variety of other ex-sanguinating remedies—while, at the same time, it is absurdly claimed that anæmia of the brain is the cause of convulsions. It is also claimed that uræmia is the cause of convulsions.

Now, let us look at the natural and logical results. Let us take the anæmia question. If anæmia of the blood causes puerperal convulsions, why give those very remedies that produce ex-sanguination of the brain? If convulsions are caused by anæmia of the brain, why give chloroform? Why give bromide of potassium? Why give chloral—all remedies that ex-sanguinate the brain?

On the other hand, let us look at the uræmia question. If urea, as it is said, collected in the blood, results from congested kidneys, if congested kidneys arrest the flow of urine and give rise to uræmic blood, we ought then to ex-sanguinate the kidneys, to bring the kidneys down to the point of proper and healthy elimination, that the blood may be freed from them.

Now, about this question of blood-letting producing convulsions. If a woman had convulsions, it was claimed, at one time, that there was irritation of the brain; now, it is claimed that it is anæmia of the brain. In order to prove this question, I took two birds. I cut the carotid arteries and all the tissues of one of these birds, that were in front of the cervical portion of the column. That bird bled, bled, fell, and died without a kick, showing that, if anæmia of the brain would produce convulsions, certainly my bird, which was an ordinary barn-yard fowl, would not have died without a kick. [Laughter.] In the other bird, I left all the arteries and other tissues in front of the column intact, and then severed the cord by a subcutaneous incision between the cervical vertebræ. The convulsions were exactly those witnessed in the fowl after decapitation, only they were more prolonged, as life was sustained by continued circulation. Indeed, the severing of the arteries arrested the convulsions. That bird might have been hopping until now, had I not severed the carotids and produced anæmia of its brain. [Loud and prolonged laughter.]

Dr. Harvey, of Indiana.—Mr. Chairman: While no one excels me in respect and honor to the lamented author of the paper which has been read, I take it that the subject-matter is to be treated of as freely as though he were here among us; and especially do I deem it right and proper that we should discuss this paper, when such doctrines and teachings have been given to us this afternoon. It is a matter of necessity, it seems to me, that the views which are taught here by the paper and by the gentlemen who have discussed the paper, should meet with an expression upon the other side of the proposition,—because I know that such a feeling exists. [Applause.]

We are certainly not going to turn back in this age of the world and begin over again and bleed our patients. While I admit the necessity of the use of the lancet occasionally, in certain well-selected cases, I want to say, that, although I am a young man, I entered the medical profession in the days of blood-letting. And while I have seen good results, important results, in labor, from the use of the lancet, I must say that I have seen better results from the use of chloroform and opium, both in convulsions and the relaxation and the prevention of lacerations and other accidents spoken of by the paper. [Applause.]

I think that we ought to feel grateful to our lamented friend for having considered the subject and for bringing it before us as has been done. But I am certain that, by the remedies that are now in use, these accidents will be prevented much better than by blood-letting, which, although it acts occasionally beneficially, certainly does harm to the patient in the long run. [Applause.]

Dr. Kinloch, of South Carolina.—Mr. Chairman:

My friend who has just preceded me has anticipated some of the remarks I propose to make. My whole impression from the reading of this paper is that it is a paper representing simply the force of early impressions, and it shows how tenacious those impressions are, and we must not forget that opinions of great men have their power for evil as well as for good. [Applause.]

I disagree, sir, entirely with the sentiments as expressed in that opinion as to the surgical use of blood-letting. I have practiced medicine, sir, for thirty-five years, as a general practitioner, and have had my fair share of obstetrical practice, and have never yet bled a woman in labor, and I may say, without boasting, that I have only lost two women from consequences connected with the parturitial state. I would ask my friend, if he were here, if he would apply the same rules to surgical as to obstetrical practice. And if the rules are not applicable to surgery, they are not applicable to obstetrics.

In reference to his remarks—I do not remember his exact language—that God should have created a skilful gynæcologist at the same time he created woman, to meet the difficulty of parturition, I would say that, according to his view, every woman ought to be born with a lancet around her neck to meet the difficulty. [Laughter and applause.]

Dr. Seymour, of Troy, New York.—Mr. Chairman: It seems to me, sir, from the experience of the different members who have spoken, that there must be some difference in the diseases of the localities in which they practice. Certainly it is the experience of the older men in the section in which I have used the lancet, that the diseases of the present time cannot sustain it, and I will ask the Section if it can be justified, in their experience, to employ bleeding in puerperal or other diseases in a condition of diphtheria and other poisons.

Dr. Smith, of Washington, D. C.—Mr. Chairman: An old friend of mine who has just left the room, remarked to me that the paper of Dr. Gross, which has just been read, takes rank with Washington's Farewell Address. [Applause.] I make this statement merely to say that the old doctors still believe in bleeding, the young do not believe in it quite so much. [Applause.]

Dr. Claiborne, of Virginia.—Mr. Chairman: I suspect that in this case, sir, the truth lies, as it ordinarily lies, in the middle,—that there are some cases which should be bled, and some which should not. And whilst I stood here yesterday, the advocate of chloroform and, as I believe, the use of chloroform is in a great many instances superior to venesection, yet I should be very sorry myself to throw the lancet utterly away. I am neither an old man nor a young man; I am in the middle, and therefore I claim to be nearer the truth. I have practiced medicine about thirty-two years, the most of that time engaged in obstetrical practice in a city where I had, of course, an opportunity of seeing a great many cases of obstetrics; and it is especially fitting that I should state to-day one word in memory of the venerable gentleman who has left with us his last contribution. At the last time on which I had occasion to appear before this convention, some one, in discussing the subject of blood-letting, made the suggestion that he doubted whether a single lancet could be found in the whole assembly. I pulled one out of my pocket and said that I had used it for twenty years,—which "brought down the house," and Dr. Gross arose and complimented me. I think, sir, in view of that occasion, that I should say this one thing—that the truth lies with him as it does with us. [Applause.]

Dr. Reamy (having temporarily vacated the chair).—As the time has nearly expired, and I find no one else on the floor, I take this opportunity to express two or three thoughts that have occurred to me. I think with my friend on the left (Dr. Harvey), that since this is a contribution to this department as the teachings of this great man, while we have the greatest veneration for his kindness of heart and greatness of mind, his wonderful industry, and his almost marvelous life work,—while we mourn together his death, even in the ripeness of his years, yet when we receive this paper, it stands upon the same ground that it would stand if he were living, because it is to be published. Therefore I, with my friend on the left, cannot let sentiments uttered in this paper from so distinguished a source, go upon the record unchallenged.

Perhaps enough has been said with reference to the fallacy taught as to bleeding, but still there is a little point in the matter which has not been brought out. Summing up in this paper, the distinguished author says that he would bleed in threatened abortion. There is no distinction drawn here as to what kind of a threat, as to the causes leading to the threatened abortion,—simply that if a woman were threatened with abortion he would bleed her. I need not qualify my remarks when I say that the inconsistency of such a recommendation is apparent. Granting that the blood-letting could do no possible harm ultimately, which we do not grant, and granting everything for it that is claimed, the proposition to bleed in every case of threatened abortion need not be condemned—it condemns itself!

He would also bleed in a case of fever! If a pregnant woman has fever, he does not make the distinction that, if the obstetrician or general practitioner in charge of that woman recognizes this fever as septic fever, the threatening of the storm that is probably to take her off, he would bleed her because she had received poison into her system, and fever had been produced by it! Why would he bleed such a woman as this, lessen her vital power, take from her the blood which is "the life thereof?" that she should therefore be the better prepared to fight the germs in her system? and bleed her that the next day she may enter upon the throes of labor minus that amount of life the lancet has taken from her? [Loud applause.] Rather husband every particle of strength, knowing that it will be required to resist the influences that are against her!

He would bleed her in a case of rigidity! He would bleed in a case of nagging pains! Now, I will not dwell upon this. An obstetrician in these times who has not been taught that the lancet is the grand remedy for all the ills that a parturient woman can enter upon, would, in cases of this kind, give her a dose of

morphia, chloral or chloroform, let her sleep for four or five hours, and come back and deliver her. Or, if her circulation required, would give her a sedative. He would bleed her in puerperal convulsions, perhaps. With my friend, Dr. Lusk, who has written so well, and whom the author of the paper has quoted, I would, and you would say, that the lancet has properly come in vogue again in those cases, and that in a certain proportion of those cases bleeding is the best remedy. There is no doubt about it, and at the same time that it includes but few of the cases. Those who have tried the hypodermic injection of morphine, and seen the woman sleep quietly and sweetly, who, a few moments ago, was in peril from most violent convulsions, would not, I fancy, be willing to bleed in every case—only in properly selected ones. [Applause.]

Now, just one word in regard to the forceps. This distinguished author ought to have sent to this Section a cut of the forceps to which he referred. He must have remembered that the instrument used by those who used it so infrequently at the time of which he speaks, was an instrument but a little improvement on the instrument used by Chamberlen himself. Those are not the forceps spoken of yesterday by my friend upon the left (Dr. Taylor, of New York). Instruments are not now what they were.

But he asserts that teachers of obstetrics have a fearful responsibility upon them for sending out obstetricians to use the forceps—to use it indiscriminately, and do with it so much damage. Now, without doubt, forceps are too frequently used by some practitioners. This instrument is used for the sole purpose of saving time, and, of course, it is wrong—to save time to the physician, I mean, for the purpose of getting to a good supper. It is wrong. But even my friend, Dr. Lusk, on my right, will grant that this charge in general is not sustained by the facts. The students who now go forth and are taught in this department, are more competent after two years' practice, very much more competent; and I do not refer to one college or to any single student. I say that the students who go out of the average medical college to-day, know how to use the forceps, are better instructed in their use, understand the principles better, know when and how to use it, than the average practitioner of 40 years' experience in those days. There is no question about it. The books that have been written upon this subject within the last few years, from those of the time of Hodge until now, make this subject much plainer. It is a very different thing from what it was. Therefore, I think this view is entirely out of place. The forceps is not the weapon of ruin described. It is not used indiscriminately and by bungling men to injure the uterus, vagina and bladder as has been described. I therefore wish to enter my protest against that particular part of the paper. I do not think that the forceps are used by the average practitioner as often as is asserted. The gentlemen who have been quoted may have used the forceps once in seven cases, but the average practitioner throughout the country does not use the forceps so frequently. I speak from observation and from information obtained from communications within the last year. They do not use it upon the average more than once in fifteen or twenty-five cases. The distinguished author of the paper is, therefore, laboring under a mistake—an error that ought to be corrected.

Dr. Taylor, of New York.—Mr. Chairman: I rise simply to make an apology for the remarks of the author of this paper. The views that he has stated are the same that I was taught, and I think the Section will pass a vote that this is an antiquated view that was taught some 50 years ago. I do not see any difference in the views stated by Dr. Gross and those which I was taught long ago. At the same time, I do not take the view now that I did at that time.

Dr. Wathen, of Kentucky.—Mr. Chairman: Granting that the administration of chloroform and chloral to the pregnant, parturient, or puerperal woman causes anæmia of the brain, as remarked by Dr. Campbell, would not this be far less injurious than blood-letting in such cases, for that depletes the brain more than either of these remedies, causing general anæmia, so that the woman is less able to pass safely through the trying ordeal of the puerperal state. I have never seen a woman with threatened abortion, or with continued or malarial fever before labor, in which I could possibly conceive that blood-letting would be of any benefit. Blood-letting, in a robust person with an increased volume of blood, in the beginning of an attack of puerperal eclampsia, may be indicated for the purpose of preventing fatal injury to the brain until other means will control the convulsions. I cannot concur in the opinion of Dr. Gross, that the abstraction of large quantities of blood from the pregnant woman leaves her system in a better condition to pass safely through the puerperal state. That this woman, who, after parturition, needs everything that will sustain her, and enable her to recover from the puerperal condition, who cannot take large quantities of good nourishing diet that makes rich blood, whose generative organs have to go through the process of involution, and who has to provide milk to nourish her child; is in a better condition after having been profusely bled, as he advises, than one who has not been bled, is a statement to me so absurd that I believe the profession of the country will not adopt it; so pernicious is it in its influence, that I trust before adopting it the profession will consider well the consequences. [Applause].

JEWISH HYGIENE AND DIET, THE TALMUD AND VARIOUS OTHER JEWISH WRITINGS HERETOFORE UNTRANSLATED.

BY C. H. VON KLEIN, A.M., M.D., DAYTON, O.

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We are now in the age of pride and the Niobe of nations. But when we look back even to the dark age of the Egyptians, we find that our sanitary measures are far behind any other advancements of modern civilization.

Hygeia, commonly called the goddess of health, and from which the term hygiene has its etymology, was a pretender, as well as her father Esculapius, who styled himself the god of medicine.

But when we look back beyond the days of those pretenders, we find that nations lived hundreds of years before them, whose literature was ever preserved by a nation which has preserved itself and survived nations of ordinary power.

When the Egyptians strove amongst themselves, their literature was destroyed, and the loss of the library of Alexandria is felt at the present age.

But of those people of whom I am now about to speak, though driven from country to country, and from nation to nation, at all ages and in all centuries, and are still persecuted, nevertheless their literature is preserved and shines forth with them in full maturity.

Hippocrates, who is supposed to have lived about 400 years before Christ, whose writings on medical art have been preserved, and who endeavored to explain the causes of disease in the human frame, and their symptoms, and pointed out their preventatives, and laid down sanitary regulations and exercises for the preservation of health, appears to have been acquainted with those large volumes of scientific writing, as he well describes their contents.

I am surprised at Galen, the great master, one of the most illustrious men in the annals of medical science, that he does not mention something about them. But I am not surprised at Paracelsus, the father of quacks, who styled himself Theophrastus Bombastus, Philosophus, and other great names to which he was not entitled.

Ever since the days of Hallè, and to the present day, men have lived in both hemispheres who became illustrious for their researches in sanitary science, still, on those great works which embrace the teaching and learning of human hygiene, they are mute.

I mean the illustrious works of the Jewish Talmud, the greater part of its contents, hygiene, a perfect treatise for preserving health. One might not think it possible that the researches of the learned could overlook such a valuable scientific writing. It is strange but nevertheless true, and can be partly explained. They are writings and teachings of a creed whose name was, before the crucifixion of Christ, and ever since has been hated, persecuted, and rebelled against.

Secondly, they are written in languages that modern scientists are unacquainted with, from the fact that the Talmudic language is a conglomeration of the Hebrew, Chaldaic, Armaic, Syriac, Arabic, Greek and Latin. It was preserved by oral delivery for many generations before Christ, and until about the second century after Christ when the Mishna was compiled. About the middle of the sixth century the entire work was finished.

The תלמוד Talmud (teaching) comprises the Mishna and the Gamara. Its contents are of a diversified character, relating not merely to religion, but to philosophy, medicine, history, jurisprudence and the various branches of practical duty.

The משנה *mishnah*, (*repetition*), or in abbreviated form ש״ס *shas*, (*six*), and the גמרא *gamara*, (*completion or supplement*), comprising the Talmud Babylon and Talmud Jerusalem is composed of six סדרים *sedarim* or orders, containing 63 מסכתות *massecoth*, or tracts, and 524 פרקים *perakim*, or chapters; of which 231 are devoted to sanitary regulations or exercises.

The first *seder* called סדר זרעים *seder zeraim*, *the order of seeds*, treats of sowing the productions of the earth, trees, uses of fruits, etc. It comprises the following treatises:

1. מסכת ברכות *massecoth berachoth*, the treatise of blessings.
2. מסכת פאה *massecoth pehah*, treatise of the corner.
3. מסכת דמאי *massecoth demai*, treatise of the doubtful.
4. מסכת כלאים *massecoth ciliam*, treatise of the heterogenous.
5. מסכת שביעית *massecoth shebieth*, of the seventh year.
6. מסכת תרומה *massecoth terumah*, of the oblation.
7. מעשר ראשון *maasher rishon*, of the first tenth, or tithe.
8. מעשר שני *maasher sheni*, of the second tenth.
9. חלה *challah*, of the cake.
10. ערלה *orlah*, of the prepuce.
11. בכורים *bicurim*, of the first fruits.

The second *seder* called סדר מועד *seder mœd*, *the order of festivals*, when they should begin and terminate, the different ceremonies to be observed on such occasions, etc., comprises the following treatises:

1. מסכת שבת *massecoth shabboth*, of the laws of the Sabbath.
2. ערובים *erubim*, of mixtures, showing how, on the evening of the Sabbath, the food collected by various neighbors should be united as if they belonged to one household, so that persons living at a distance should not break the Sabbath by too long journeys. [This treatise has some hygienic bearing].
3. פסחים *pesachim*, the passover.
4. שקלים *shekalim*, shekels, treatise on contributions.
5. יומא *yoma*, the day of atonement, treats of the solemnities peculiar to it.
6. סוכה *succah*, tabernacles, how they are to be built and used. This contains, also, some hygienic rules on ventilation.
7. ביצה *betzah*, egg, whether an egg laid on a festival day should be eaten that day or not.
8. ראש השנה *rosh hashannah*, New Year's, how the day should be kept.
9. תענית *taanith*, fasts, treats of the various fasts throughout the year.
10. מגלה *megillah*, the roll, treats of the feast of Purim.
11. מועד קטן *moed katon*, minor feasts.
12. חגיגה *chagigah*, sacrifices on festivals, treats of the three great festivals when all the males were obliged to appear before the Lord, and the sacrifices they were to bring.

The third *seder* called סדר נשים *seder nashim*, *the order of women*, this section discusses the distinctive rights of men and women, marriage, divorce, the customs, inclinations and sickness of women. It is divided into the following treatises:

1. יבמות *yebamoth*, brother's widow, treats of the law obliging a brother to marry the relict of his deceased brother.

2. כתובות *cethuboth*, marriage settlements, relates to marriage contracts, dowries, etc.

3. נדרים *nedarim*, vows, what vows are binding or not, who can make vows and who not.

4. נזרות *neziroth*, Nazarites, the laws relating to them.

5. גיטין *gittin*, divorce. This treatise has many valuable points on medical jurisprudence on that subject.

6. סוטה *sotah*, jealousy, trial of, treats of women suspected of conjugal infidelity.

7. קדושין *kiddushin*, betrothing, treats of the laws of espousal. It states that all ass-drivers are wicked, camel-drivers are honest, sailors are pious, physicians are destined for hell, and butchers are company for Amalek.

The fourth *seder* is called סדר נזיקין *seder nezekin*, *the order of damages*, and is composed of the following treatises:

1. בבא קמא *baba kama*, the first gate. It assesses damages done by a beast according to the benefit it receives. If it eats a peck of dates its owner would be fined a peck of barley, as dates are not more nourishing to a beast than barley.

2. בבא מציעא *baba metziah*, the middle gate, treats of the laws of usury, landlord and tenant, etc.

3. בבא בתרא *baba bathra*, the last gate, relates to commercial transactions, buying and selling, inheritances, etc.

4. סנהדרין *sanhedrin*, treats of the great national senate.

5. מכות *maccoth*, stripes, relating to the forty stripes which were to be inflicted on certain offenders.

6. שבועות *shebuoth*, oaths, who are qualified to take them. A vast amount of medical jurisprudence is found in these chapters, as it treats of persons who are disqualified—women, slaves, idiots, deaf persons, the blind, the wicked, despised relations, and those interested in their evidence.

7. עדיות *edaioth*, evidences, respecting witnesses and witness-bearing.

8. אבות *aboth*, fathers, contains a history of those who handed down the oral law.

9. הוריות *horaioth*, punishment, how persons were to judge in cases of trial, and how transgressors were to be punished.

10. אבודה זרה *abodah zarah*, idolatry, or the worship of stars and meteors, and how to avoid idolatry.

The fifth *seder* is called סדר קדשים *seder kodashim*, *the order of holy things*, treating of sacrifices, oblations, their different species, etc. It is composed of the following:

1. זבחים *zebachim*, sacrifices, the nature and quality of the offerings.

2. מנחות *menachoth*, meat offerings.

3. חולין *cholin*, unconsecrated things. This treatise is a notable endeavor towards the protection of animals, as well as to the hygiene of mankind. It treats of what is clean and unclean, of not eating the sinew that shrank, and not killing the dam and her young in one day.

4. בכורות *becoroth*, first-born, respecting the first-born of beasts.

5. ערכין *eracin*, estimations, relates to the valuing and taxing of things dedicated to God.

6. תמורה *temurah*, exchanges, the manner in which exchanges are to be made in sacred things.

7. כריתות *cerithuth*, cutting off, treats of offenders cut off from God.

8. מעילה *meilah*, trespass, treats of things partaking of the nature of sacrilege.

9. תמיד *tamid*, daily sacrifices.

10. מדות *middoth*, measurements, relates to the measure of the temple.

11. קנים *kinnim*, birds' nests.

The sixth and last *seder* is called סדר טהרות *seder taharoth*, the order of purifications, relative to the purity and impurity of vessels, to household furniture, and other things and the way they should be purified. It is composed of twelve treatises almost entirely devoted to hygiene, as follows:

1. כלים *celim*, vessels, treats of vessels and household goods which convey uncleanness.

2. אהלות *aholoth*, tents, treats of tents, cottages and houses retaining uncleanness, how persons who enter them become unclean, and how they are to be cleansed and disinfected.

3. נגעים *negaim*, plague of leprosy, treats of leprosy of men, garments, or dwellings, how their pollution is conveyed and how they are purified.

4. פרה *parah*, the red heifer, directs how she is to be burned and her ashes used in purifying.

5. טהרות *tahoroth*, purifications, how purification is to be effected when a person who has touched an object has been made unclean.

6. מקואות *mikvaoth*, pools of water, concerning the reservoirs of water in which the Jews bathed, or washed themselves.

7. נדה *niddah*, separation, the uncleanness of women during the menstrual period, etc.

8. מכשירין *meeshirin*, liquors, treats of fluids and their purification.

9. זבים *zabim*, issues, treats of nocturnal pollution, seminal emissions, masturbation, etc.

10. טבול יום *tebul yom*, the day of baptism, treats of certain days when the Jews have to wash their bodies, or immerse themselves in order to become clean.

11. ידים *yadaim*, hands, respecting the washing of hands before eating any meal.

12. עוקצין *oketzin*, stalks of fruits, relative to the stalks of fruits and how they become unclean by touching other fruits.

It can be seen from the above treatise that it is full of hygiene. It is true that it contains many fabulous, trifling, absurd, childish and irreverent things, and we coincide with Milman when he says:[1] "the Talmud, that wonderful monument of human industry, human wisdom and human folly."

The only people at present, with very few exceptions, who seem to be acquainted with the Talmud

[1] Milman, History of the Jews. Book xx.

are the Jews, and they appear to be silent or skeptical in regard to it. I cannot conceive why those Jewish physicians living in the most enlightened parts of civilization, in America and Europe, in a city like Vienna, for instance, where in fact the greater part of the medical faculty of the University of that city is composed of Jewish writers and teachers, who are second to none, why they should be silent on the writings and teaching of this great work which has been suppressed for so many generations.

It rests with me in my humble judgment to think they are guilty of two unpardonable mistakes,—one the fear of prejudice to their reputation by revealing their treasures,—the other, their false impression that it is theological and of no value to science. It is said[1] Galileo read medicine with a Jewish physician who taught him the Talmud, and from which he formed his ideas of astronomy, and that should remind them of him who to the last moment said "it moves for all that." They forget that the[2] Codex Romana is taken from the Talmud, on which is based all the moral and civil law of all civilized governments. They forget that among the commentators were physicians of no simple ability, men like Maimonides, רמבם Rambam, commonly called Moses Egypticus, who was a physician to the Sultan; Nachmandides called רמבן; Ramban, who wrote valuable works on medicine; Rabbi Solomon ben Isaac, commonly called רשי Rashi, and many other illustrious men of the middle ages, like Ibn Gabrial, Ibn Ezra, Abarbanel, and Alfosi, some of them were even counsellors to crowned heads,—the illustrious Abarbanel[3] was privy counsellor to Alphonse the V, King of Portugal. If men of this rank could take advice from those men, I think we surely could be benefited by it. We could translate with great pride Egyptian, Grecian, Roman and Hindoo, names not worthy of mention, but of those men whose names would decorate the index of medical authors, the annals of medical science is obliterated.

Those names just mentioned are but a few of the great commentators, whose discourses taken separately would no doubt be approved by the present most advanced minds of sanitary science.

Those works would have long been in the hands of progressive physicians, if not for the short life of Chiarini, an Italian, who proposed to publish a French translation of the whole Jerusalem and Babylon Talmud. In his Thearie du Judaism and in his Talmud Babylon, Leipsic, 1831, he explained his views and intentions. His death, however, while attending the sick, of cholera, in 1832, unhappily cut short his labors.

There were numerous others who have attempted to translate separate treatises and chapters. The best of all is the one lately published by Doctor Rabbinowitz, of Paris, though not complete but worthy of note. I trust it will soon be translated in many other modern languages.

Happening to be one day in the Union Hebrew College of Cincinnati, I listened to a boy of fourteen, who so clearly recited to his instructor and translated it into English the Talmud חולין *cholin* giving all the anatomical names of the animals, and describing the pathological views of the organs, their healthy and unhealthy appearance, that with pain I thought if here is but a boy, probably without a finished education, who can translate so readily, how easily could a physician of his race, with all the accomplishments of modern education perform the task. It left one to charge them with gross negligence and rational hypothesis for their assumption.

There are besides the Talmud many other valuable works among the Jews which are almost entirely devoted to hygiene, viz.: חיי אדם *Chi Adam, life of man;* שולחן ערוך *Sulchan Oruch,* a set table; אורח חיים *Aarach Chaim,* path of life; יורה דעה *yorah deah,* teaching of knowledge, etc.

I would enter into detail of the תריג מצות *Tarjag Mitzvoth,* six hundred and thirteen commands of the law, more than one-half of which pertain to hygiene, and show that the whole period of Jewish life, from Alpha to Omega, is based upon sanitary measures and morality, which is the basis of health. But my time being limited, I will attempt to prove this as briefly as possible, and comment upon it, basing my views upon the researches of many scientific investigators and naturalists.

To do this we must commence with the first origin of the race. Our earliest acquaintance of Jewish history discloses the fact that it has commenced with a sanitary act. [1]Abraham was the first Jew who became such by circumcision. In his days there lived a people all around, in the foremost rank.

The Canaanites and Egyptians were distinguished for their sensual propensities, especially for their low passions in lust and harlotry, so that scarcely one female from the age of three years and upwards could be found without having been defiled; not one woman was safe from being ravished; a husband had to guard against jeopardy on her account. For the truth of this statement we must refer to Biblical history. When [2]Abraham was to start for Egypt he took the precaution to deny his wife Sarah, claiming her to be his sister, he feared the Egyptians might slay him and take possession of her, whereupon the ancient Rabbi's comment "because the Egyptians were then well known for being an unchaste, lascivious and lewd character." [3]It relates further that Abraham sent his servant Eliezer to select a wife for his son Isaac from amongst the maidens of his own kinsmen and there was but one maiden, Rebecca, the daughter of Bethuel, and she was a pure virgin, never having been defiled by any man. It implies, says the great commentator Rabbi Solomon ben Isaac (Rashi), [4]that all the girls of other parentage were either naturally ruptured or misused in an unnatural way.

By such a state of prostituted humanity Abraham deemed necessary some prophylactic, so as to protect his descendants against raging diseases which might occur from such a state of immorality.

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[1] Racconto Viti di Galileo a Agostino Mascardi.
[2] Historia Codex Romana. Cap. xxii, a Clodius.
[3] Historia Politica Lusitania, d' Somduva.

[1]Genesis xvii.
[2]Genesis xx.
[3]Genesis xxiv.
[4]Rashi's Commentary on the Bible. Genesis xxiv.

Abraham was a patriarch and philanthropist, a lover of humanity; his father, an idol maker, made him acquainted with human weakness of faith. He knew well he could make his people follow him by impressing upon them a power above mankind, so he declared circumcision an ecclesiastical act, and like other true men, upon his own person, at his old age, ventured the operation.

By this he has accomplished something that every physician of the present day approves. Humanity might be proud if every man in the world was circumcised. It is true they do not claim it as a sanitary measure, but I do not care, be it to serve God or the devil, I for one would feel proud of its operation. The horrible suffering from phymosis and paraphymosis is but too well known and can not occur within the tribes of Israel.

It appears that the Jews were educated to morals from their beginning, contrary to the "History of Prostitution" by Dr. Sanger, wherein he claims that prostitution commenced with Jewish women, and was a common thing among them even without shame. He endeavors to prove this by relating the criminal intercourse of Tamor and Judah. This is one of the curious errors into which learned men occasionally fall, strangely and unaccountably. [1]Tamar was not a Jewess.

He further aims to prove by Judah sending his friend, a man of high standing, to redeem his pledges. It can be proved just the contrary by a careful perusal; that when he sent the Adullamite to replevy his cloak, bracelet and staff, and when he returned saying he could not find her, Judah said: [2]"Let her take it to her, lest we will be shamed." And after he found out Tamar his daughter-in-law played the harlot, and that she was pregnant, he would not recognize her.

If prostitution was so common among the Jews they would surely have some infection, or at least some disease, but we must admit that there is no disease mentioned within the whole book of Genesis except that Leah had sore eyes.

It is true that the Egyptians were so wicked in their practice, that it may seem incredible to us, but it admits of the fullest proof that [3]prostitution was a part of their worship, and in some of their temples large numbers of females were kept, and the price of their shame went to the support of their priests. Sons cohabited with their mothers, brothers with their sisters and with their nearest kinsmen; man with man, and man with beast.

Such was the state of affairs among the Egyptians at the time of Moses the great legislator. He, with his philanthropic heart and active mind, saw that his people were in danger of becoming educated to the same mode of life as the Egyptians. Moses, like Abraham, saw that he could be believed only by frightening them by commands through a heavenly king. He at once proceeded to Mount Sinai to receive such commands. When he returned he appeared with mystical performances, with fire all around him, heavy clouds were produced by the smoke, thunder and lightning followed as a matter of course. These had great effects upon the people and his commands were kept holy; not only the ten commandments, but all other commands that Moses claimed to be the gift of a God. Here again he instructs them: "[1]After the doings of the land of Egypt wherein ye dwell shall ye not do: and after the doings of the land of Canaan, whither I bring you, shall ye not do * * * none of you shall approach to any that is near of kin to him, to uncover their nakedness. The nakedness of thy father or the nakedness of thy mother shalt thou not uncover; thou shalt not uncover the nakedness of thy father's wife; * * * of thy sister; * * * of thy son's daughter; * * * of thy father's wife's daughter; * * of thy father's sister; * * * of thy mother's sister," etc., "also thou shalt not approach unto a woman to uncover her nakedness so long as she is put apart for her uncleanness; * * * * thou shalt not lie with mankind as with womankind. Neither shalt thou lie with any beast to defile thyself therewith; neither shall any woman stand before a beast to lie down thereto, * * * * for in all these the nations are defiled which I cast out before you."

Indeed, it can be seen by the Egyptian doctrine of metempsychosis or transmigration that it tended directly to induce this crime. It is not, however, a matter of inference, but of historical truth that this crime was practiced in Egypt both by males and females, but the code of Moses intercepted the Jews from following the footsteps of their neighbors; and right here it is proper for us to remark that its influence continued unto all generations. There were intervals when the Jews became perfidious. There were many who became [2]uncircumcised in order to devow their nationality. Under such circumstances it became a necessity to establish laws more rigid than those given by Moses. Here arose the great Rabbis and compilers of the Talmud and formed a סנהדרין Sanhedrin who established a court of law which had the power to enact religious ordinances and to decide legal cases, with pains and penalties according to their crime, having jurisdiction over life and death. This tribunal consisted of seventy-one men,[3] the most learned among the Jews, who were the highest power of the nation.

Besides this great body at Jerusalem there existed many minor Sanhedrins consisting of twenty-three members, in every large country, while at smaller places the judiciary consisted of three persons, composing their minor courts. The former mentioned Sanhedrins are the ones who ordained the great laws of hygiene. The last mentioned minor courts are still in existence and operation in almost every congregation throughout Europe. They are termed בית דין *baith din*, house of judgment. Their main acts are decisions upon what is כשר *cashir*, clean, or טרייפע *traipha*, unclean, so that if anything occurs within a Jewish household that raises the question of

[1]Kitto's Biblical Cyclopædia.
[2]Genesis xxxviii.
[3]Manley's Commentary of the Bible, vol. iii, chap. xx, sec. viii.

[1]Exodus, xix.
[2]Celsus describes the operation. DeRé Medica, vii, 25.
[3]Some claim seventy-two, including the High Priest.

cleanness it is referred to this body, and their decision is generally abided by. These questions arise very frequently, especially among the Orthodox Jews, as their cleanliness is amazingly great.

In washing the hands, נטילת ידים *natilat yadaim*, they are not only instructed to do this, but they are told in what manner: for instance, they are not to wash their hands by dipping them in a vessel, but the water must be poured upon them; they must pour with the right hand upon the left, and with the left on the right, etc., three times; after this they wash the face and rinse the mouth, drying the hands and face with a towel. This must be done as soon as they arise from the bed,—even in the daytime. They must not touch any portion of the body before this is done; also before and after each meal, after each evacuation or urination, or the touching of dead bodies or anything unclean. In districts of Orthodox Jews they have public baths which are used every morning before breakfast by each individual; these are termed בית טבילה *Bait Tbilah*, a house of baptism. This certainly is a very notable endeavor to prevent disease.

It lays down sanitary regulations for what they must eat and drink. The diet is so regulated that one article of food will not interfere with another in digestion; for instance, after eating meat they are to wait three hours before milk or its substances dare be used, as the milk is liable to coagulate and irritate the stomach; even vessels in which meats are prepared are prohibited to be used for milky substances, or *vice versa*. This is done for the purpose of strengthening the commands so that they will not allow themselves to consume meat and milk at the same time. They are also prohibited from eating חית רעת *chait roet*, wild beasts that do not chew the cud, or have the hoof parted, of the species of a bear, lion, tiger, etc., as such live almost exclusively upon animal food. This is reasonable, as they are liable to be infected by morbid poisons from the consumption of dead animals that might have died from hydrophobia or other raging diseases, such as are sometimes found among dogs, cats, rabbits, foxes, wolves, etc., for whatever disease originates spontaneously in those animals is subject to be transmitted from one to the others; they are therefore dangerous as diet. Even עופת רעת *æphet roet*, wild fowls of the species of the crow, eagle, ostrich, owl, stork, bat, etc., are prohibited, as they consume dead animals.

The meat the Jews consume from the beast or the fowl must be killed in a certain way, and with a certain instrument, not according to the vulgar custom by striking on the head, by a rude knife, or in a coarse and violent way that would mangle or lacerate the body, which might produce instant inflammation and probably blood poison, thus making it unclean and unfit for anybody to consume.

The killing of the beast as well as the fowl must be by bleeding through the jugular vein. Prior to the killing the animal must be well rested, and its respiration normal. There must be no broken limbs; their lungs must be blown up to the trachea and if it does not expand it is soaked in water twenty-four hours, when if it does not expand, the animal is unclean.

The veins and arteries must be dissected from the animal; this is done for no other purpose but to ascertain whether there are deep-seated abscesses or not, (such abscesses being generally found about the arteries and veins) that would make the animal unclean. The blood of all animals is prohibited as the consumption thereof is dangerous to human life, as all animals are subject more or less to scrofula or other blood diseases. According to [1]Drs. Buchner, Kerner, Dunn, Horn, Shuman and others, poison has developed in sausages made of blood and to which they have given the name of Allantotoxicum.

Therefore the Jews do not eat meat, either of the beast or fowl, unless prior to eating it has been well soaked and salted. Their mode of preparing is first to soak it half an hour, then it is well rinsed off with clean water, and salted on both sides, placed upon a board slanting, there to remain from twenty to thirty minutes, then again it must be rinsed three times before its use is proper. The prohibition of the use of חזיר *chazir* swine for food among the Jews is unnecessary to dwell upon, as its effects are but too well known to the laymen as well as to the physician. Not only from the danger of trichinæ but of all other diseases that the hog is inherent to. The hazard from the use thereof and its importation have of late years become national issues in all civilized governments. It should not only be an issue where it is to come from, but its use should be entirely eradicated. Mountains would sink down from the dead caused by the use of this miserable brute. Fish without scales and fins דגם בלו סנפיר וקשקשת *dagim balœ snapir wacashcashet* are also prohibited among the Jews. This stands to reason, as frightful poisons are found in many kinds of fish, not to say that all fish without scales and fins are poisonous, but all poisonous fish are without scales and therefore they must be dreaded. Naturalists have declared that fish live upon their kind, that is to say fish without scales live only upon such as have no scales, etc., so they are liable to be poisoned from others.

All שרצים *sharatzim*, creeping things, or reptiles or food containing the same is strongly prohibited and the use thereof is considered a great crime by the Jews.

Water, vinegar, and other liquids suspected of foreign bodies must be strained through a cloth. All vegetables subject to vermin, such as parsley, caraway, lettuce, green onions, peas, mushrooms, berries, cherries, and all vegetables whatsoever must be picked and examined leaf by leaf, kernel by kernel, and grain by grain.

All fruits such as apples, pears, cherries, citron, apricots, peaches, oranges, lemons, nuts, etc., that are decayed or mouldy, the use of is prohibited; the seeds thereof are always considered as unfit for use. By this it can be seen the ancients have already feared the germ of disease.

All wines such as יין מסך *yayin mesech*, drugged

[1]Christison on poisons.

wines are interdicted, as such wines might influence or propagate gout or cause other afflictions.

Even the manner in which food should be cooked and prepared is laid down, for example the Talmud asserts that an egg cooked in sand, as is done in hot climates, or laid beside a hot kettle, or wrapped in towels, is not proper food to be consumed, this may appear to us as senseless, but nevertheless it stands to reason that an egg cooked in the above described manner may become partly hatched. By this it can be seen that hatching eggs by artificial temperature is not entirely a modern invention.

One, and above all, of the hygienic laws of the Jews is the separation of women during their menstrual period הלכות נדה *halchot niddah the laws of menstruation.* It is the duty of every husband at least two or three days prior to the expectation of that period to separate from his wife not only from the bed, but even the chamber they occupy if possible, or if any spots be visible upon her clothes, or she should inform him of it, he should at once sever from her and they must remain apart during all the period of her sickness and until six days thereafter, and during that time they are not allowed to eat out of one vessel, and it is advisable not to dine at the same table, nor in any way play or joke with each other. This last to prevent the awakening of passion. In six days after the period has ceased, she must test herself with a clean white cloth, if no red spots appear she must then go מקוה *mikvah,* pool or טבילה *tabilah,* bathing. Bath houses for that purpose are generally erected by Jewish congregrations, but the wealthy people sometimes have them erected in their residences. The bathing must be done by immersing so that every hair on top of her head is covered with water; her legs and arms must be spread in order to allow the water to surround all parts of the body. Gentlemen, I can not describe in less than a volume the laws and regulations of separation.

The same laws as the above are applied to newly married women: After the first intercourse תשמיש *tashmish,* they must make the separation and go through the same *modus operandi* as a menstruant. This to allow healing.

They are also instructed how to visit the sick בקור חולים *bakur cholim,* whom they shall visit, and in what diseases. Not only that, but even the clothes they wear are regulated, how they should be made and of what fabrics. The cloth must not be a mixture שעטנז *shatnez,* of linen and wool; this may appear very frivolous to us, but I say there are sanitary measures even in this, as these two textures counteract each other, wool retains its temperature, is a non-conductor of heat and keeps the body warm, while linen is a conductor of heat and cools the body. The custom of burying their dead in linen, is done for no other purpose but to prevent infection, as wool is a retainer of contagious and infectious matter. Pasteur's experiments are but too fresh in our minds. I do not know whether he attributes the contagion of the sheep to the animal body itself or to the wool. I can not conceive that an animal interred for many years could still contain contagion, as the body would be entirely decomposed. But I do believe the wool might retain its infection for hundreds of years, especially if buried in dry ground.

In accordance with the above proofs it can be seen, as heretofore stated, that the laws of morals and health were with the Jews from their earliest history. And those who are acquainted with the Talmud, which is based upon the fundamental principles of the Bible, know that there is not another religious sect or creed in the universe, with the exception of the Jews, and the Mohammedans, who have in their theology, hygiene and diet. It is an established fact that the Koran[1] is taken from the Talmud, or the Mohammedans would not have it.

One thing is certain; the Mosaic and Talmudic laws have accomplished more by their terrific fear of some unknown power that they inculcate than all the legislation of the civilized world with their rigid pains and penalties.

Some say the works of Shakespeare were written 200 years before their proper time. I have just as much reason to believe that the Talmud was written a thousand years ahead of its time. It appears to have every field of literature cultivated, and those pertaining to health to the utmost extent.

You may ask, what have the Jews to show for their sanitary or hygienic measures? Gentlemen, I will say they have a superior claim to the respect of society. Statistics speak for them and show that they produce a vast amount less of venereal diseases than any of the civilized or uncivilized nations on the face of the earth. Above all, I believe that the sanitary mode of Jewish life has great tendency to cultivate the brain and mind.

The Jewish race appears to produce a greater per cent. of great men (according to their numbers) in every branch of science and art than any other sect or creed on the earth. Who does not know the great composers and writers in music, Meyerbeer, Mendelssohn, Rubenstein and others? Not a word will I say about the stage, as the name of Rachel and and others, is but too well-known. Not a whisper of the great thinkers and poets, Heine, Phillippsohn, Zunz and Auerbach, but we cannot afford to skip the names of Spinoza, Acosta and Moses Mendelssohn.

As commercial men their superior is not known. As financiers they rule the world. There are, however, very few who follow the profession of law, as they are generally debarred from practice in many of the European countries, but if permitted, they are not excelled in that profession. The American bar is proud of and honors the name of Judah P. Benjamin, of New Orleans, his attainments have made him a great man in the courts of England.

I was astounded after various inquiries and correspondence with all the medical colleges of the world, which was done by me at great labor, that 67 per cent. of Jewish physicians maintain professorships in medical colleges; 36 per cent. are medical authors. Medicine appears to be the favorite study, and as a rule, they always maintain a high standing. There have been many Jewish physicians in a professional

[1] Geiger, Was hat Mahommed aus dem Judenthum genommen

capacity at the courts of famous kings. The celebrated[1] Maimonides was physician to King Salaheddin, of Egypt, already mentioned in the fore part of this paper. Rabbi Meir to the King of Castile; Zedekiad, physician to Louis the Pious of France, and Montalto to Queen Marie of Medicis.

It was once decided by the fathers of the church that a Jew could not act as medical adviser to crowned heads, and yet Pope Boniface IX and Pope Julius III appointed Jews for their body physicians. [2]Of Francis I, it is related, while once seriously sick, he requested Charles V, Emperor of Germany, to send him a Jewish physician. The Emperor sent a convert, but Francis refused to accept his services, and said he had plenty of Christian physicians, he needed the services of a Jew.

By the foregoing it can be seen that what I have asserted, to wit: that the Jewish hygiene cultivates the mind, has already been recognized as a fact by the highest authorities of church and crowned heads.

In conclusion I will say it is high time for us to review the past history of that nation, and ascertain, while the nineteenth century still lingers, if it is not best for us to adopt some of their codes in life. Let us no longer berate a nation which was so brave and full of humility. Let us throw away the idle writings of priestcraft, through which we are deprived of writing our scientific attainments with those of the ancient Jews, and dividing the responsibility of health and life.

I may have accomplished little by these researches, but I have at least pointed out a subject in which science is deeply interested. As it has long been my desire to discourse with my honored colleagues, especially those with whom I feel connected by conjugality of sentiment on the subject of Jewish hygiene, I therefore trust that the Section of State Medicine of the American Medical Association will encourage at least some of these extraordinary measures of health, which will, I am confident, tend to final good in all science, all principles, all feelings, and all actions.

MEDICAL PROGRESS.

SURGERY.

SUTURE OF THE MEDIAN NERVE.—Prof. Tillaux has read a remarkable paper before the Academy of Science (*Union Médicale, Medical Times*) upon two cases of secondary suture of the median nerve, with rapid reëstablishment of functional activity in the paralyzed parts. By secondary suture he means the suture which is only applied at a period more or less remote from the division of the nerve, when the two ends have become separately cicatrized. The first case was that of a woman who, while cleaning a window, cut her right wrist so deeply as to completely divide the median nerve. Primary suture of the nerve was not practiced, and after the healing of the wound all the parts supplied by the median remained completely paralyzed. Incapable of working for her living, the girl was admitted to the hospital four months after the accident, and the wound, on examination, showed a rectilinear transverse cicatrix, painful on pressure, on the wrist. At this spot could be felt a tolerably distinct prominence, which was supposed to be formed by the central end of the divided nerve. The whole of the parts supplied by the median nerve were completely insensible to contact, to pain, or to temperature, the patient not feeling the slightest sensation on plunging the ends of the paralyzed fingers into boiling water or picking up burning coals. The muscles of the thenar eminence were atrophied, and the opposing power of the thumb was lost. The paralyzed parts were colder than those of the opposite side, and the skin had assumed a slightly violaceous color. The operation was as follows:

Chloroform being administered, the two ends of the nerve were exposed by a vertical incision, and were found separated from each other by about a centimetre, the central end being enlarged and that of the periphery tapered off. The extremities of both of these were excised by scissors, so as to get fresh surfaces of the same diameter; and instead of employing forceps, which might have contused the nerve, a very fine needle, armed with a *crin de Florence*, was passed from one end to the other. This was gently tightened until perfect juxtaposition of the two surfaces of the section was secured, carefully preventing the neurilemma becoming folded in towards the axis of the nerve, which might have impeded reunion. The thread was tied, cut close to the knot, and left in the wound. The external wound was drained, united by silver wires, and covered with a Lister dressing—the most minute precautions of the antiseptic method having been observed. The hand was maintained motionless in a state of flexion during a whole week, without the dressing having been touched. On the eighth day union was complete. By the third day the index and middle fingers felt the contact of a pin carried gently along their surface, and the sensibility continued to increase from day to day, so that six weeks after the operation the patient left the hospital, the sensibility and motion having returned to such a point that she could work at the needle or crochet, and was in a condition to resume her occupation.

(2) Exceptional cases are rarely solitary, and in the hospital was a woman suffering from an affection of the abdomen, who fourteen years previously had cut her wrist with a bottle, with the effect of producing the same paralytic symptoms with those related above. Witnessing the success of the operation in that case, she requested that it might be performed in her own, and the result of the operation was complete success.

In what way did innervation become reëstablished? It would seem natural to suppose that it was through the immediate approach and rapid junction of the central end of the nerve with the peripheral end. But Professor Vulpian declares this to be impossible,

[1] Post-Biblical History, page 65. Sigmund Hecht.
[2] Post-Biblical History, page 66. Sigmund Hecht.

inasmuch as the peripheric end of the nerve, totally degenerated, had lost all property of transmission, as is invariably demonstrated by experiments on animals. Professor Ranvier, who consented to examine the portions of the nerve cut off for the purpose of vivification, declares also that this explanation is impossible, since the nervous tubules, the agents of transmission, have disappeared in the peripheric end, leaving nothing to be found but fibrous tissue.

THE TREATMENT OF SCIATICA BY CONGELATION.—Dr. Debove (*Bulletins et Mémoires de la Société Médicale des Hopitaux de Paris*) in considering the use of revulsives in sciatica and their beneficial action through the excitation of the extremities of the affected nerve, found that they were always restricted in the number of nerve filaments influenced, as it would not be proper to apply a vesicant or cauterization from the hip to the calcaneum. It was therefore suggested to him to obtain this revulsion by means of congelation, for the parts could be congealed and resume the integrity of their functions. There was at all events no objection to making the experiment, as the greatest evil would be the production of an eschar, which was an ordinary result in the classical treatment by cauterization.

Accordingly he used the chloride of methyl, which gives a temperature of 9.4 F., or, in hastening its evaporation by a current of air, 4.7 F., and which is readily applied. His first patient had been treated at various times by cauterization with the red hot iron and without benefit, and had been confined to the bed for a month. He applied the remedy over the painful surface from the hip to the external malleolus; a minute later the patient, who up to that period had been unable to put his foot to the ground, walked without limping and declared himself cured. He was astonished at the relief, Dr. Debove was none the less so himself, but he recalled the influence of the imagination in affecting marvelous therapeutic cures, particularly in sciatica, which has been cured even by cauterization of the lobule of the ear. But since this first case he has been able to repeat his experience sufficiently to warrant him in affirming that this method effects a speedy and constant cure. This case had been affected by the disease for three months and has had no return of it. His other cases were either relieved at once or had slight relapses which were entirely relieved by a second use of the chloride of methyl.

These patients were affected with simple neuralgic sciatica of the rheumatismal form, existing from fifteen days to three months, they all suffered so severely as not to be able to put foot to ground.

The apparatus used was the siphon of commerce, containing chloride of methyl, costing about $1.20 a quart. To the extremity of the beak of the siphon, he adjusts a lead pipe provided with a small orifice, to allow of a proper direction of the jet, and to prevent waste. It is applied over every painful portion from the sacrum to the malleolus, and the skin is immediately seen to congeal, turn white and become hard as stone. The patient complains of a painful burning sensation, but, so say the patients, it is nothing like as painful as cauterization.

The skin rapidly reacts from the congelation, which leaves a more or less marked erythema—the most that has been produced was a slight vesication—never an eschar. From that time on the patient is relieved and able to walk, a new application is made where the pain reappears at one or two points, the following days the relief continues, or perhaps there are one or two painful points, which are again congealed and entirely relieved.

ANATOMY AND PHISIOLOGY.

DECUSSATION OF NERVES.—According to the *Lancet's* summary of the clinical observations of M. Pitrès, a considerable modification will have to be made in the prevailing opinion that in all cases the pyramidal tracts decussate at their well-known site in such a manner that the bulk of the fibres of one side passes over to the lateral column of the spinal cord, whilst the small remainder continues downwards in the anterior column. From careful clinical observation, it seems not at all improbable that further complexity ought to be introduced into the anatomy of the nerve-paths in the brain. Secondary degenerations of cerebral origin are sometimes exclusively confined to the opposite lateral column of the cord; sometimes to the opposite lateral column and the internal part of the anterior column of the same side as the cerebral lesion. Pitrès has also collected ten cases of unilateral cerebral lesion, in which the secondary degeneration occupied both lateral columns of the spinal cord. The cerebral disease varied in its nature, extent, and site; the secondary sclerosis traversed the peduncles, pons, and anterior pyramid, and then abruptly became bilateral below the decussation of the pyramids. The secondary changes were sometimes exactly symmetrical, sometimes more marked on the same side. The columns of Türck were generally spared, or presented but slight damage, whilst the other structures of the cord were normal. M. Pitrès has sought to explain the coexistence of symmetrical medullary lesions with unilateral disease of the brain. His explanation is founded on the individual variations of the decussation of the pyramids as described by Türck and Fleming. There may be simply a crossed pyramidal tract, or there may be a direct as well as a crossed pyramidal tract, and each may bear almost any numerical relation one to the other. Further, the pyramidal tracts of the two sides of the brain may or may not proceed after the same plan; the decussation may be complete for one tract and incomplete for the other. In certain subjects it seems possible that the fibres of one pyramidal tract in the bulb may split into two portions, one of which may proceed down the opposite lateral column, while the other descends in the lateral column of the same side. The disturbance of balance and progression appears to be more persistent and more grave when the secondary sclerosis is bilateral than when it is unilateral. Partial paraplegia, exaggeration of the knee-jerk, and contracture of the lower limbs may exist, however, where the sclerosis is unilateral.

MOVEMENTS OF THE UTERUS, by Frommel (*Zeitsch. f. Geb. und Gyn.*)—Experiments made since the time of Harvey have proved that it is the muscular force of the uterus which expels the fœtus. This fact has been verified in the woman, in cases of paralysis, and fœti have come into the world after the death of their mothers.

Kehrer concluded from his experiments, that it is the vascular pressure and not the quality of the contents of the vessels that determines the muscular movements, and that the centres for the rhythmic contractions are to be found in the brain and cord.

In 1864 Frankenhäuser announced that he had found the centres for contractions of the uterus in the cerebellum and cord, the force being transmitted by the great sympathetic; in his theory the sacral nerves were the moderators for uterine contractions. In 1867 he declared that there were ovarian nerves, independent of the uterine plexus, which had motor filaments going to the uterus.

Spiegelberg believed that the uterus had its own motor centre. Rein has confirmed that idea, at least so far as the cerebro-spinal system is concerned; for, having cut all connections between the uterus and that system, he has seen the organ contract, and comes to the following conclusions:

1. The uterus is capable of spontaneous rhythmical contractions.

2. They can be produced in all the stages of its development. They are more regular with females that have borne children than with the nulliparæ or with those who have not reached their complete development.

3. A considerable lowering of the temperature of the body lessens these contractions, without depriving them of their energy, if the temperature is elevated, the contractions are accelerated, and in high fever they are checked.

4. The regularity of the uterine function depends directly upon the condition of the temperature of the body. An elevated temperature has a particularly perturbating influence.

5. Disturbances of the circulation of the blood have a considerable influence upon the movements of the uterus; compression of the vena cava produces the same effect after a longer interval.

6. The uterine contractions do not depend upon any external centre.—(*Annales de Gynecologie*).

MATERIA MEDICA AND THERAPEUTICS.

DETECTION OF BRUCINE AND STRYCHNINE.—The following tests for these substances are proposed by Dr. O. Lindt (*Pharmaceutical Journal and Lancet*). For brucine a convenient test is selenic acid containing nitric acid (five drops of selenic acid, of sp. gr. 1.4, and one to two drops of nitric acid, of sp. gr. 1.2). If the fatty oil is first removed from sections of strychnos nux vomica and S. ignatii by petroleum ether and this reagent used, the laminated cell-walls quickly take on a bright red color, which gradually turns to orange and yellow, while the cell cavity and the granular substance contained in it remain uncolored, indicating the absence of brucine. Nitric acid alone does not answer, the coloration of the alkaloid being marked by the formation of xanthoproteic acid. For the detection of strychnine, Lindt discards the potassium bichromate reaction, because the violet color is developed only in immediate contact with the crystal; and the solution of strychnine in sulphuric acid escapes so rapidly from the preparation that no conclusion can be drawn from a subsequent straining as to the original position of the alkaloid in the nux vomica seed. But it is readily shown by a solution of ceroxide sulphate in sulphuric acid, if the fatty oil, grape sugar and brucine have first been removed by maceration in petroleum ether and absolute alcohol. The reagent imparts a violet-blue color to all the thickening layers of the cell-walls. But the color quickly disappears, while the deposits of albumen assume a bluish opalescent tint, which finally turns to a reddish-violet. The interior of the cell becomes of an intense red color. The reagent retains its activity for a considerable time. The microscope is, of course, necessary to follow all the details of these microchemical tests.

MEDICINE.

NEPHRITIS CONSEQUENT ON PAROTITIS.—During last October mumps or idiopathic parotitis appeared in Berlin as an epidemic. It was more violent in the environs than in the city. Not many children escaped, and a good proportion of adults were attacked. Dr. Croner has communicated to the Berlin Medical Society the history of a patient suffering, during this epidemic, from parotitis followed by nephritis. The patient, a boy, aged six, had an attack of mumps, which followed its usual course. The child obstinately kept in bed, although his general condition was improved. On the fifth day fever appeared, and the right parotid gland was considerably swollen. The fever diminished after 24 hours, the child regained his appetite, and his illness bid fair to follow the usual course. He complained of feeling ill, and would not leave his bed. A fortnight after the child suffered from symptoms of parotitis, his eyelids were swollen. Dr. Croner, on examining the child, observed œdema of the dorsal surface of the hands and feet, also ascites to a slight degree. The urine was also scanty, containing blood, and was highly albuminous. These symptoms of nephritis became modified. The patient had suddenly a fresh attack fever six days after the first indications of nephritis were observed. The submaxillary glands were enlarged and painful. This condition slowly improved, but subsequently all the symptoms reappeared, and the right submaxillary glands were enlarged, and caused pain. About the middle of January of this year, albumen disappeared from the urine; the albuminuria had continued during five weeks. Convalescence followed, and the child was completely cured. Dr. Croner has found but one similar case on record, published by Henoch. He observes that the opposition met with from the infant patients, and especially from the parents, which prevents introducing a stylet into Steno's duct, in order to obtain some of the glandular secretion, prevents researches relating to the infectious element of parotitis.—(*British Medical Journal.*)

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THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, SEPTEMBER 27, 1884.

KARL BRAUN'S LAST ONE HUNDRED LAPAROTOMIES.—Professor Karl Braun, of Vienna, has recently published an interesting and instructive account of his last one hundred laparotomies.[1] The operations, indicated by tumors in connection with the female genital apparatus, were performed in the Vienna Gynæcological University Clinic, No. 1, of the General Hospital, usually in the presence of numerous physicians and students, during the last five years—1879–1883, inclusive. The results of the operations are as follows:

Of all laparotomies, 73, or 73 per cent., recovered, 27, or 27 per cent., died; of 90 laparotomies, with exclusion of ovarian carcinoma, 70, or 77 per cent., recovered, 20, or 22 per cent., died; of 74 ovariotomies and parovariotomies, in cases of cystomata, 60, or 81 per cent., recovered, 14, or 18 per cent., died; of 10 ovariotomies in cases of ovarian carcinoma or sarcoma, 3, or 30 per cent., recovered, 7, or 70 per cent., died; of 16 myomotomies, with or without hysterectomy, 10, or 62 per cent., recovered, 6, or 37 per cent., died; of 64 ovariotomies, without hysterectomy, 54, or 85 per cent., recovered, 10, or 15 per cent., died; of 10 ovariotomies with hysterectomy, 6, or 60 per cent., recovered, 4, or 40 per cent., died; of 56 ovariotomies in cases of pedunculated cystomata, 49, or 86 per cent., recovered, 7, or 12 per cent., died; of 18 parovariotomies, of the broad ligament, 11, or 61 per cent., recovered, 7, or 37 per cent., died; of 9 enucleations of parovarian cystomata, 7, or 77 per cent., recovered, 2, or 22 per cent., died; of 3 partial excisions of cystomata (*Abkappungen*) and drainage of the sac, 1, or 33 per cent., recovered, 2, or 66 per cent., died; of 7 cases of cystomata, in which the viscous contents were removed by the hand, 5, or 71 per cent., recovered, 2, or 28 per cent., died.

Of the 74 ovariotomies, the recoveries and deaths resulted as follows:

After removal of
- 5 dermoidcystomata, 5 recoveries, or 100 per cent.
- 7 unilocular cysts, 7 recoveries, or 100 per cent.
- 1 *fibroma ovarii*, 1 recovery, or 100 per cent.
- 2 cystosarcomata ovarii, 2 recoveries or 100 per cent.
- 1 gelatinous tumor, 1 recovery, or 100 per cent.
- 58 myxoidcystomata, 44 recoveries, or 75 per cent., 14 deaths, or 24 per cent.

Of 10 ovariotomies, on account of *carcinoma ovariorum*, 3 survived the operation, but 2 died, one year afterwards, of a return (Rezidive) of the disease; the recoveries, therefore, are 1, or 10 per cent., deaths, 9, or 90 per cent.

Of 5 simple myomotomies, 4 recoveries, or 80 per cent., 1 death, or 20 per cent., were recorded. Of 11 myomotomies, with hysterectomy, 6 patients, or 54 per cent., recovered, 5 patients, or 45 per cent., died.

Of 9 myomohysterectomies with extraperitoneal treatment of the pedicle, 5, or 55 per cent., recovered, 4, or 44 per cent. died.

Of 2 myomohysterectomies with intraperitoneal treatment of the pedicle, 1, or 50 per cent., recovered; 1, or 50 per cent., died.

Of 3 simple myomotomies, with extraperitoneal treatment of the pedicle, 3, or 100 per cent., recovered.

Of 2 simple myomotomies, with intraperitoneal treatment of the pedicle, 1, or 50 per cent., recovered, 1, or 50 per cent., died.

Of 3 myomotomies, and 11 ovariotomies, the patients were pregnant. They made excellent recoveries.

From this analysis the following table of recovery percentage is constructed.

	Per cent.
Dermoidcystomata, unilocular cysts	100
Fibroma ovarii, simple myomotomies	100
Pregnancy in myomotomies	100
Pregnancy in ovariotomies	100
Ovariotomies in cases of pedunculated cystomata	86
Ovariotomies without hysterectomies	85
Ovariotomies in cases of cystomata, and cysts in general	81
Myomotomies without hysterectomies	80
Laparotomies without *carcinoma ovariorum*	77
Enucleations in cases of parovarian cystomata	77
Ovariotomies in myxoid cystomata	75
100 laparotomies (with inclusion of carcinoma)	73
After removal of viscous, sac contents, by the hand	71
Myomotomies and hysterectomies	62
Parovariotomies of the broad ligaments	61

[1] *Wiener Medizinische Wochenschrift*, 1884. Nos. 22, 23, 27, 29, 30.

	Per cent.
Ovariotomies with hysterectomy	60
Myomohysterectomies and extraperitoneal treatment of pedicle	55
Myomotomies with hysterectomy	54
Myomohysterectomy and intraperitoneal treatment of pedicle	50
Myomotomy and intraperitoneal treatment of pedicle	50
Parovariotomy, with partial excision and drainage of sac	33
Ovariotomies on account of carcinoma or sarcoma	30
Since death occurred in two cases, at the expiration of one year after the operation, the recovery percentage, after malignant ovarian tumors is only	10

PROFESSOR KARL BRAUN'S OPERATIVE METHODS IN LAPAROTOMY.—Professor Karl Braun, of Vienna, is justly considered one of the greatest obstetrical and gynæcological surgeons of the day. Aside from highly original, intellectual endowment,—cultivated and developed by the vigorous, scholastic training of the *Gymnasium*,—local conditions have conspired to make him the great authority he is. From March, 1849, to Sept., 1853, Karl Braun acted as sole assistant in the Vienna Obstetrical Clinic; from 1853 to 1856, he acted as head-master of the Trieste Lying-in Hospital; in Dec., 1856, he returned to Vienna, and assumed control of the Obstetrical Clinic. In October, 1873, the Lying-in Department of the Vienna General Hospital was divided into three clinics. Karl Braun took charge of the First Clinic, while the Second and Third Clinics were placed respectively in care of Professors Josef Spaeth, and Gustav Braun. The colossal material which has come under Professor Karl Braun's observation, during his thirty-five years of uninterrupted professional activity, is difficult of adequate conception. During twenty-five years, 1849–1874, inclusive, he superintended 100,000 labors. Since 1877, he has performed Cæsarean section, with hysterectomy,—Porro's operation,—twelve times. In another editorial, we noticed at length his laparotomy statistics, as collected from 100 cases, occurring during the last five years, 1879–1883, inclusive. His operative methods have always attracted attention, and contributed much to the comparative perfection of the *technique* of laparotomy. A brief review of his operative *technique* appears in the *Wiener Medezinische Wochenschrift*, Nr. 30, 26. July, 1884.

As regards antisepsis, the rules of Thomas Keith are observed. The operating room is thoroughly cleansed the night before the operation, and thoroughly fumigated with burning sulphur. The room is then freely ventilated, and, in winter, moderately heated. One hour before the operation the room is filled with the vapor of an aqueous solution of carbolic acid by means of a steam atomizer. This preliminary, one hour's disinfection, constitutes the sole function of the spray apparatus. The patient receives a bath and is gently purged, the day before the operation. In the ante-room she is anæsthetized with the English chloroform mixture, the *mons* shaved, bladder emptied, vagina disinfected, skin surface of the abdomen thoroughly washed with a soft soap and 5 per cent. carbolic acid solution; the abdomen is covered by warm compresses, and a caoutchouc cloth, with a long central slit; the extremities, well enveloped in flannels, are fixed. The operator and assistants wear clean clothes. Their fore-arms and hands are thoroughly disinfected by means of soft soap, nail-brush, potassium hypermanganate and dilute hydrochloric acid, thymol and salicylic acid water, or one to two thousand solution of corrosive sublimate. The instruments are polished, passed through a flame, and disinfected with carbolic acid. Sponges and fine, disinfected, hemmed patches of shirting muslin lie for weeks in 5 per cent. carbolic acid solution. Immediately before use, they are washed in pure water, and then placed in a warm aqueous solution of thymol, 1 to 1,000.

In cases of cysts and cystomata with fluid contents, a large, flat protection sponge is placed beneath the lower angle of the abdominal incision, and the fluid removed by a thick trocar; before the removal of the trocar the inner wall of the cyst is washed out with lukewarm thymol water. The cyst, thus emptied, is withdrawn through the abdominal wound by suitable forceps. Adhesions to the parietal peritonæum, omentum or tubes, when slight, are peeled off from the cyst wall by the index finger. In cases of intraligamentous cystomata, when adhesions to the mesocolon and large intestine exist, it is better to cut into the *mesenterium*, to work with the finger-ends under that structure on the cyst wall and attempt enucleation. When adhesions to the colon of 3 centimetres extent exist, it is advisable to cut out a portion of the disinfected cyst wall, and allow it to remain on the mesocolon, in order to prevent rupture of the intestinal canal.

When the pedicle, in cases of ovarian cystomata, is long enough, it is securely compressed in a clamp, ligatured, below the clamp, in halves, by the figure of eight turn; subsequently the ligature is made to encircle the entire pedicle. The ligature selected for this purpose is of strong silk. Above the clamp the pedicle is cauterized with the thermo-cautery, allowed to cool off, and, if perfectly bloodless, returned to the abdominal cavity. When the omentum, tubes, or thick adhesions are divided, the procedure is iden-

tical. After enucleations of intraligamentous cystomata, bleeding vessels are ligatured, the folds of the broad ligaments and mesocolon are brought into exact apposition by the running or interrupted suture. In applying these sutures, it is necessary to carry them deep down to the floor of the peritoneal sac—due care being observed to exclude the ureters—in order to secure the nicest approximation of wound surfaces. When intraligamentous cystomata cannot be removed from the uterus, they must be amputated and treated by the extraperitoneal method.

When intraligamentous cystomata can neither be removed from the uterus, nor amputated, it is best to ligature the diseased broad ligament close to the uterus, remove the outer portion of the diseased broad ligament, and return the uterus to the abdominal cavity. When adhesions between a cystoma and the colon cannot be divided, and the ureters are similarly attached, the cystoma may be partially excised, and the rest of the sac sewed into the abdominal incision, and the cavity of the sac drained.

In solid tumors of the uterus, operative procedure is identical with that of Porro's operation. In pedunculated, solid uterine tumors, it is well to attempt to preserve the ovaries and the uterine cavity in an intact condition. The pedicle is ligatured with a rubber cord, held in place by a perforated shot, compressed with a Leiter's wire ecraseur, and the stump thoroughly cauterized. After the removal of the tumor, the pedicle is pierced between the ligatures with one or two long needles placed transversely, and treated by the extraperitoneal method. When the solid tumor is attached to the uterus by a broad basis, two ligatures, the rubber cord and the wire ecraseur are placed around the base of the tumor, the circulation interrupted and local anæmia produced. The tumor is then rapidly divided by a circular incision through its greatest circumference; the lower half of the tumor is enucleated out of its tough capsule by the fingers, a pedicle formed, which can then be treated in the usual extraperitoneal manner. In this way the uterus and both ovaries can frequently be preserved.

In general, the pedicles of ovarian tumors are returned to the cavity of the abdomen, while the stumps, in cases of myomotomy and myomohysterectomy, are treated by the extraperitoneal method.

Every bleeding vessel in peritoneal adhesions is surrounded with a silk ligature, and securely tied; parenchymatous hæmorrhage of the peritonæum is controlled by light touches of the thermo-cautery, heated to a gray glow.

Before closure of the abdominal incision, the *toilette* of the peritoneal cavity is completed with the greatest care, and the air, which enters during operation, is pressed out.

In closing the abdominal incision, the upper and lower angles of the wound are surrounded by silk sutures, which include the peritonæum. Silver sutures, with lead plates, and perforated shot, separated by a distance of three ctm., are then passed transversely, so that the peritoneal surfaces, on either side, are brought into accurate apposition, to the extent of at least one ctm., and are compressed in this position. Deep and superficial sutures of silk complete the union of the incision.

Over the abdominal wound, after suitable cleansing, a powder of sodium benzoate is thickly dusted. Finally, a heavy Lister dressing of iodoform, and carbolic acid gauze, absorbent cotton and mackintosh is applied.

Chicago Floating Hospital Association.—The object of this Association is to maintain one or more floating hospitals on the lake, near the city, with all the necessary accommodations for infants and young children with their mothers and nurses, including boat to take them to and from the same at stated hours each day during the hot months of summer, thereby giving the sickly children of the poor all the benefits of cool and pure air a part of each day. There is probably no other public charity in the city that accomplishes as much good in promoting health and saving life, with the expenditure of the same amount of money. The following official report will show the work and expenditures of the season just closed:

Chicago, Ill., Sept. 16, 1884.

The Floating Hospital Association, in making their annual report, desire to thank those who have so generously provided the means for their summer work.

The first boat was sent out to the pier on Monday, July 7, and the season was continued to and included Friday, September 12, a period of ten weeks—the longest in our history; 21,489 persons were cared for during this time.

$1,761.71 has been received,
$1,428.00 has been expended,
$ 333.71 we have now on hand,

which it is proposed to use in the purchase of new hammocks, and other necessaries, made imperative by the very decided increase in the attendance from year to year. It was feared at one time during the summer that we might not be able to go on, but the very liberal support given us by members of the Board of Trade and other constant friends, placed the matter beyond doubt. No accident of any kind occurred, and nothing has marred the success of the work. For

ice and milk we were indebted, as we have always been, to the kindness of the respective dealers.

Jos. STOCKTON, Pres.
C. L. RUTTER, Sec.

List of donations other than cash, season of 1884:

Coal. Robert Law.

Ice. Washington Ice Co., A. S. Piper & Co., E. A. Shedd & Co., H. P. Smith & Co.

Crackers, for the whole season. H. H. Kohlsaat.

Milk. Kee & Chapell, J. J. Solon, William C. Hill, Duff Brothers, D. McCarthy, — Fisher, W. Adams.

Sundries. Edwin Heywood.

NEW WORKS ON PRACTICE OF MEDICINE.—Quite opportune, so far as relates to students who may be about to select text-books, two new works on Practical Medicine have just made their appearance—one from the publishing house of William Wood & Co., New York, by Alfred L. Loomis, M.D., LL.D., Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York, Visiting Physician to Bellevue Hospital, etc.; and the other from the publishing house of Jansen, McClurg & Co., Chicago, by Nathan S. Davis, A.M., M.D., LL.D., Professor of the Principles and Practice of Medicine in the Medical Department of the Northwestern University, known as the Chicago Medical College, Visiting Physician to the Mercy Hospital, Chicago, etc.

Both these works will be noticed more at length in the proper department of the JOURNAL at an early day.

CHOLERA IN EUROPE.—The epidemic has continued with unabated severity in Italy during the last week. During the 24 hours ending September 17, there were 463 fresh cases of cholera in Naples, and 265 deaths. On the 18th there were 507 new cases and 283 deaths. On the 19th the number of cases reported in Naples was 437, and in the Italian provinces exclusive of Naples there were 149 cases, making a total for the 24 hours of 586 cases, of which 343 were fatal. On the 21st in Naples, 373 cases and 146 deaths; other places, 89 cases and 47 deaths. On the 22d in Naples, 362 cases and 192 deaths. Elsewhere in Italy, 67 cases and 34 deaths. For the last date the bulletin from Spain was as follows: Alicante, 5 deaths; Elche, 5 cases, with 4 deaths; Novelda, 2 new cases, with 6 deaths; Monforte, 5 cases and 3 deaths; at Tarragona, 6 cases and 3 deaths; elsewhere, 2 cases and 1 death.

YELLOW FEVER.—The death of Captain Simpson, a yellow fever patient, is reported at the Quarantine Hospital, Boston, Mass., under date of September 18. On the 21st, a severe case of yellow fever was discovered in the upper story of the Hotel Espanol, at No. 116 West Fourteenth street, New York City. The patient was Domingo Morales, who arrived on the steamer Newport from Havana on the previous Tuesday. The vessel with its cargo had been detained at the quarantine, but the passengers, 36 in number, after inspection by the health officer of the port, and appearing free from disease, were allowed to proceed to the city and became dispersed.

MEDICAL COLLEGES.—During the week just closing, all the regular medical colleges in this city have opened their annual courses of instruction; and the same is true of nearly all the medical schools in this country.

SOCIETY PROCEEDINGS.

MASSACHUSETTS MEDICAL SOCIETY.—SUFFOLK DISTRICT.

SECTION FOR CLINICAL MEDICINE.

Dr. G. L. Walton read a paper upon Hysteria as Affected by Removal of the Ovaries.[1]

Dr. John Homans spoke as follows: I think this operation cannot yet be definitely judged or accurately valued. I consider it to be still on trial. Many successful cases are reported and others which are not favorable. Alienists and psychologists are divided upon this subject, some recommending the operation in selected cases, while others are not friendly to it under any circumstances. The removal of the ovaries should be thought of in relation to painful menstruation, and consequently in those conditions which depend upon or are induced by painful menstruation. In skilful hands the operation of ovariotomy and the other more common operations of abdominal surgery are no longer so dreaded as they were a few years ago, and the results of ovariotomy to-day are equally as favorable as those of capital operations of the extremities. Abdominal surgery is different from other surgical procedures, and cannot be taught; it must be learned by observation and experience.

Thus far I have operated upon three cases of the kind to which attention is directed in the paper of Dr. Walton. The first patient was a lady twenty-two years old, very bright and intelligent, highly educated, and thoroughly refined. Menstruation had always been irregular and painful. As the disease proceeded the patient first became hysterical, then gradually grew to be destructive, and finally became insane. It was thought that removal of the ovaries might have a beneficial effect, and the case was first brought to my notice by her friends, who sought my opinion in regard to this means of relief. There was

[1] See page 331 of this JOURNAL.

at that time great tenderness in the left iliac region with rigidity on touching the part. She had already spent one whole year in bed at her home, and had passed a year at the Adams Nervine Asylum. She had been the frequent subject of gynæcologists and of specialists of various kinds. Finally she was placed in an insane asylum and was kept quiet by means of morphia. The pain was still present in the left side and much worse at the menstrual epoch. At such times the application of leeches to the *os* generally afforded some relief, but the case was gradually becoming worse and it was feared that her insanity would eventually become chronic.

In March, 1883, I removed both ovaries, with the Fallopian tubes. The patient did perfectly well, and made a good recovery from the operation. Soon she began to experience relief from the old distress, and the iliac pains entirely left her. Then the headache diminished, and she became again a bright, intelligent, and perfectly sane person. She began to write, and furnished considerable manuscript for one of the daily papers. Finally her correspondence was intercepted by the family, and it was found that she had resumed the use of morphia, using the money earned from the newspapers to surreptitiously purchase the drug. On being reasoned with, she promised to give up the morphia, which she did by gradually diminishing the dose, until for months she has taken none at all. On examination, the uterus was found to be in an infantile condition, about half the size of the thumb. From this time no unfavorable symptoms have shown themselves, and the patient and her friends consider the result as very successful.

My second case was a young lady who has had a somewhat celebrated history, from the fact that the disordered mental condition had been of some years' duration, and was of a very striking character. This patient was the subject of a scientific essay by Dr. W. B. Goldsmith, under the title of "A Case of Moral Insanity," in the *American Journal of Insanity* for October, 1883, and a few extracts from her history, as given by Dr. Goldsmith, will clearly set forth her condition. He says:

"The patient is a girl 18 years old, rather short and small, but of well-knit, muscular figure, and very active and strong. Her head is fairly well formed, though slightly inclined to the bullet pattern; her expression amiable and bright, and her general appearance calm. In her seventh year she had a severe attack of scarlet fever, followed by a marked change in her mental condition. She became easily excited; seemed unable to apply her mind, and though apparently not malicious, could not be made to obey. Her father committed suicide at about this time, and this appears to have been the first occasion when she seems to have completely lost self-control. Soon after this she was sent to school, where she caused much trouble in various ways, and the teacher declared she spoiled the discipline of the entire school. After this she became subject to violent paroxysms of temper, in which she would scream and throw herself about, and break furniture and tear clothing. When between 8 and 9 years old, she was found naked bathing with some boys, and at this time admitted that she had frequently indulged in sexual dalliance with boys older than herself. She was now placed in various "Homes," from each of which she was dismissed on account of her violent and destructive paroxysms, and because she could not be made to observe any rules or regulations. She finally was placed in the Hospital for the Insane, at Taunton, Mass., when 9 years old, and there remained four years. No intellectual impairment was there detected in her, but she was thought to be in a condition of moral insanity. Dr. W. H. Gage wrote of her, 'She was an extremely difficult patient to manage.'

"From the Insane Hospital at Taunton she was removed to a similar institution at Worcester, where she remained about twenty months, whence she was removed by her friends contrary to the advice of the hospital authorities. She remained quite well for four months, when on some trivial occasion she became much excited and leaped from the roof of a veranda, and was found screaming and maniacal on the walk below. The mania lasted two days, when she was placed in the Lunatic Hospital at Danvers. At this time her attacks of violence were generally induced by some slight disappointment or irritation, and would commence by attempting to destroy windows, pictures, or anything fragile. She was very violent toward her attendants, striking them and tearing their clothing and hair in a most vicious way. She has shown violence to every attendant with whom she has been for any length of time. Since her admission to the asylum at Danvers she has taken a variety of drugs, and exhausted the list of punishments and rewards practicable in a hospital for the insane. She has been kept thoroughly under the influence of bromides for weeks together; and the same is true for a less time of chloral hydrate; she has taken iodide of potassium, and has been overpowered by hyoscyamine; she has battled with various forms of mechanical restraint, and has demolished many; has tried every grade of ward, from the most violent, to a parole ward where she came and went at will, and all without any perceptible injury or advantage."

I operated upon this patient last July, and removed both ovaries together with the Fallopian tubes. The wound healed by first intention, and she returned home in four weeks, and has been at home ever since. She has appeared to be perfectly well since the operation. Not a drop of menstruation has appeared since the ovaries were removed. Dr. Rowe has expressed the fear that a relapse of the mental disease might recur in these cases even after one or two years. In this case any hæmorrhage seemed to be a sufficient cause for a paroxysm, and the menstrual exacerbation was thought to be aggravated by the fact that it was of hæmorrhagic character, and the removal of the ovaries seemed to be beneficial in the way of preventing this recurrent loss of blood.

The third case was not a suitable one for this operation. The mental disease was of ovarian origin, coming on suddenly soon after marriage, and might, perhaps, have been benefited by an operation at an earlier date. There was undoubtedly commencing dementia before the ovaries were removed, and the

patient's condition has become steadily worse from that time. The wound healed by first intention, and not a drop of menstruation has appeared since that time. The patient has become very violent and destructive, and has made dangerous attacks upon her attendants and upon other patients. She destroys her clothing, and has become filthy, passing her dejections in bed or in her garments. In this case removal of the ovaries has not benefited the patient, and the case has probably progressed exactly as it would have done if nothing had been attempted in the form of an operation.

It is of no use to remove the ovaries by the vagina, but if the operation is to be done at all, it should be by the abdominal incision, and the tubes should also be removed, when a much more favorable result may be expected.

Of these three cases the first may be classed as one of hystero-mania, the second as one of pure hysteria, and the third at present as advancing dementia.

Dr. Cushing inquired who it is that gives consent to a capital operation when this becomes necessary in an insane patient?

Dr. Homans replied that the consent of the guardians or next friends must in all cases be obtained, and also the consent of the patient. Few patients to whom this operation might be expected to prove of benefit are so insane as not to be able to understand and consent to its performance.

Dr. Rowe stated that he had seen many cases of each of the diseased conditions mentioned by Dr. Homans which have exhausted all the resources of asylums, but he had never thought of ovariotomy as a means of treatment. This should be henceforth taken into more careful consideration. In all capital operations the consent of the natural or constituted guardians of the patient as well as his own should first be obtained.

Dr. Putnam remarked that he had had no experience in this method of treatment of insanity. The operation would seem to commend itself even in cases in which the ovaries are not diseased. In many cases in which nervous symptoms are prominent, the cure may be aided by judicious control of these functions. In ovarian troubles it may be useful to remove the periodical stimulation of these organs. In many instances of trephining, the nervous symptoms have been benefited or entirely relieved, when no fracture was found, no depression of bone existed, or any other evident mechanical interference with the functions of the cerebral structures could be anywhere observed. In like manner the supra-orbital nerve is cut in cases of spasm of the eyelid, followed by relief to this condition. It is thought to act by removing one source of irritation to the motor centres.

Dr. Homans added that removal of the ovaries with cystic degeneration of their structure is sometimes followed by insanity. This operation is still young in its relation to mental disease, and is liable to abuse. It should be especially guarded in its application to these unhappy cases, and should be done only as a last resort. In one case in which the ovaries were removed per vaginam the condition of the patient was much worse than before the operation. If the tubes had been taken too, the result might have been different. Such a person ought not to be allowed to breed, and if anything is attempted, both ovaries and both Fallopian tubes should be removed, and thus the utmost possible good be accomplished for the patient. In one case of double ovariotomy the patient has flowed regularly and irregularly ever since that time. Removal of the ovaries does *not* cure dysmenorrhœa. This important fact should not be forgotten in advising any operation short of complete extirpation of both ovaries and Fallopian tubes.

Dr. J. J. Putnam said he had had no experience in the use of Battey's operation, but was quite prepared to believe that its effects might be beneficial both where the ovaries are diseased and even in some cases where they are not. The favorable action of the treatment in the latter group would probably be due to a restriction of the activity of the nervous system within narrower bounds.

Dr. Farlow exhibited an antiseptic pad which had been devised for the benefit of ladies while traveling or while menstruating and after parturition. It is made of coarse cheese cloth, and is filled with borated absorbent cotton, and can be easily prepared by any one. This pad is for sale by druggists at one dollar a dozen.

Dr. Fitz showed a series of specimens from a case of senile gangrene operated on by Dr. Warren, and reported upon by him at a meeting of the Society for Medical Improvement March 24, 1884.[1] No untoward symptoms occurred till within twenty-four hours of death, and the appearance of the wound was favorable till that time. At the autopsy the edges of the wound were firmly adherent throughout the greater part of its circumference, and there was no discoloration or swelling. Both popliteal and interior tibial arteries were found calcified just below the popliteal space, and both contained thrombi. Venous thrombosis extended upwards from the amputated stump into the femoral vein, terminating just below Poupart's ligament. The thrombus was pale-red, friable, and softened centrally.

Several branches of the pulmonary artery of both lungs, at least a line in diameter, containg reddish-gray thrombi, and at the base of the right lung there was a peripheral nodule of hæmorrhagic infarction of the size of a walnut. Both lungs were œdematous, and the right pleural cavity contained four ounces of opaque pink fluid, the pleural surfaces being besmeared with a thin yellow membrane. There was no necrosis of the pleura.

The spleen was more than twice the usual size, intimately adherent to the abdominal wall and to the omentum. It was dense and heavy, the surface irregularly depressed and nodulated from the presence within the organ of numerous nodules of anæmic necrosis, varying in size from that of a plum to that of a hazelnut. These patches were often porous on section from the presence of numerous cavities containing a relatively clear fluid. Between the necrotic patches the spleen was indurated and reddish-gray

[1] See Boston *Medical and Surgical Journal*, 1884, xv, 340.

in color, while scarcely a trace of splenic structure was to be found normal in color and consistency. A circumscribed patch of thickened intima of the aorta was present, which included the origin of the cœliac axis and the superior mesenteric artery. The former was entirely occluded by fibrous tissue, and the calibre of the latter was diminished one-half for a short distance from the aorta, and then was considerably dilated.

The hepatic branch of the cardiac axis was dilated, the splenic artery was narrowed, its walls thickened, and its cavity completely obliterated throughout its entire course by means of an adherent, dark-red, firm thrombus. The splenic vein was also obliterated by a reddish-gray, centrally-softened thrombus, which was continued into the portal vein. The trunk of the latter was filled with the thrombus which extended into the hepatic branches of this vessel.

Peripheral portions of the liver showed a nutmeg appearance, and a nodule of anæmic necrosis the size of a plum was found.

There was a varicocele of the right side, the spermatic vein entering the right renal vein. A moist, dark-red, distending thrombus was continued from the immediate vicinity of the testicle into the right renal vein, whence it extended toward the inferior vena cava as a thrombus the size of the tip of the little finger.

The chief interest of these specimens lay in the evidence of long-standing serious disease without striking symptoms at the time of the operation; also in the comparatively slight alterations of the liver, despite the obliteration of the cœliac axis and the obstruction of the portal vein. Embolism of the pulmonary artery was to be regarded as the immediate cause of death, while the thrombosis of the renal vein was presumably of marantic origin, and might not have been of above 24 hours' duration.

Three varieties of thrombi were present, each independent in origin from the others, and neither having given rise to recognizable symptoms till the day before death, when the occurrence of pulmonary embolism was suggested. The stomach gave evidence of extensive softening of the mucous membrane, with putrefactive emphysema, although neither condition was associated with the usual favoring circumstances.

Dr. W. F. Whitney showed a specimen of Actinomycosis, the first ever exhibited in New England. It occurs in horses, cattle, sheep, etc., and has been frequently observed in Europe. This specimen was from a bull, and was sent to Professor Lyman, of the Harvard Veterinary School, and by him referred to Dr. Whitney. The disease was located on the lower jaw-bone, and was as large as the two fists. The character of the growth is fibrous, and shows large numbers of patches of a yellow color, which contain lime salts, and also masses of the parasitic growth.

Dr. Fritz stated that this disease has been observed in isolated cases in the western part of the United States, but that this is the first case reported in this vicinity. The disease can be communicated to man from the domestic animals. Usually the jaw is the part first attacked, and from this point the disease may extend to the thorax, spine, and elsewhere. The origin of the disease fungus is not yet definitely known. It has been thought by some to enter the organism by means of defective teeth.

Adjourned at 10:15 o'clock.

FOREIGN CORRESPONDENCE.

LONDON LETTER.

LONDON, Sept. 1884.

The fixtures for the opening of the winter session at the medical schools of the metropolis have, with one exception, been made. The session 1884-85 of the London Hospital will commence on Wednesday, Oct. 18, when the prizes for the past session, and the nursing probationers prizes will be distributed at 8 P. M. by the Lord Mayor. The medical department of King's College will meet on the 1st of October at 4 P. M., when the prizes will be distributed, and an address given by the Rev. H. Wace, principal of King's College. The session both at St. Bartholomew's and Guy's hospitals will commence on the first of October, but for neither has an opening address been announced. At St. Thomas' Hospital Medical School the session will be opened on Wednesday, Oct. 1, when an introductory address will be delivered by Sir Risdon Bennett at 3 P. M. The session of the faculty of medicine at University College will commence with an introductory lecture given by Dr. W. R. Gowers. On the same date the Middlesex Hospital will open with an introductory lecture by Dr. David W. Finlay. After the lecture the prizes awarded during the past summer and winter sessions will be distributed. At St. Mary's Hospital School the session will be opened with an introductory address by Dr. Lees on the 1st of October, and next day at 8:30 P. M., a conversazione will be held in the new school building. In connection with this hospital a new wing, containing seventy additional beds, was opened by her Royal Highness Princess Louise, on the 2nd of last month. The session at Charing Cross will this year open without an introductory address. The West London Hospital Preparatory School of Medicine will have its first session opened some time in October.

Dreading the danger of conveying patients stricken with small-pox and other contagious fevers to their special hospitals, and that public fever ambulances may possibly, during their passage through crowded city streets, tend to distribute infection, Dr. Gayton, the senior medical officer of the Metropolitan Asylum Board, has so perfected the ambulance van that it can no longer even be suspected as a possible centre to circulate infection. Instead of the open glass and wooden louvre shutters as hitherto, the apertures in Dr. Gayton's safety ambulance consist of a double layer of perforated metal enclosing a sufficient layer of suitable absorbent material saturated with an acknowledged germicide. Fresh air is admitted through modified and improved "Tobin" ventilators, of a horn shape with the larger end opening externally,

whilst inside the van the smaller extremity of this air tube is provided with a disinfecting chamber constructed like those of the other apertures or windows of the van. In these improved safety fever ambulances the Metropolitan Asylum Board now judiciously carry their small-pox convalescents from their Hamstead hospital to their river wharf, whence the patients are transported to the hospital ships lying off Purfleet.

Statistics have often been collected to determine the respective popularity of suicide among men and women, among inhabitants of different countries, and of the different means employed. These, however, have only had reference to actual suicides; and a contribution to the literature of the other side of the question, where intending suicides have failed in their purpose, is supplied by the annual report of the Reformatories and Refuge Union, just issued. From this it appears that of all those cases of attempted self-murder dealt with by the Union during 1883, not a single case of the non-effective use of a revolver occurred, which can only signify that firearms are either more fatal or less popular with the wretched class of beings that would leave the world by crime. In the choice of means other than firearms, a curious discrepancy between the behavior of the sexes appears. In the first place, nearly twice as many men as women attempted and failed to take their own lives; of the women, all had been rescued from drowning. Not a single instance is recorded of an abortive attempt at female suicide by poison or the knife. Only three of the men, on the other hand, attempted to drown themselves, while more than half had taken poison. One would have expected, perhaps, that poison would have been at least as popular with women as with men, and that the rougher sex would have taken more violent means. It is a little surprising, too, that men should fail more often than women in their determination to do away with themselves.

Philip Chelham, the oldest Free-Mason of England, and it is supposed in the world, has just died at Southport. He was in his 97th year, and was initiated a Free-Mason in 1811. He had been Past Master of Lodge 322 since 1841. In 1802 he volunteered as Assistant-Surgeon on board His Majesty's ship "Phœbe, and was at Trafalgar, though not in action.

In reference to the resignation of the medical staff of the Northwest London Hospital, which has excited some comment, at the request of the Committee of Management, Sir T. Spencer Wells, Mr. John Marshall, President of the College of Surgeons, and Mr. Ernest Hart, the editor of the *British Medical Journal*, have consented to act as a Committee of Reference, to whom the rules and regulations of the hospital will be submitted with a view of remodeling them, in conference with a deputation from the Committee of Management, on a basis which may be considered satisfactory and likely to meet the views of the profession, as well as those of the Governors.

At a conference held at the Health Exhibition, Mr. Wm. Earsie read a paper on Cremation. He said the general concensus of opinion was in favor of the introduction of the practice. With regard to the only tangible objection made to cremation, that it might serve as a screen for poisoners, he thought the conditions enforced by the Cremation Society before allowing the use of their crematorium at Woking, would fully meet the case. Dr. Cameron, M.P., after referring to the immense number of persons who are buried without certificates, said that if cremation was legal, Government had no right to interfere in the matter. As to the objection that it would shield crime, he thought that was disposed of by the fact that numbers went to their graves without any certificate of death. Sir Spencer Wells was of opinion that the present style of burying the dead perpetuated disease, and that cremation would be a great boon. Dr. Farquharson, M.P., observed that the growth of opinion upon the subject was very rapid, and as it had been held that cremation was legal, no doubt when the subject again came before Parliament it would meet with more success.

Dr. James Collis Browne died on August 30 at his residence, Mount Albion, St. Lawrence-on-Sea. Dr. Browne was the inventor of chlorodyne. The deceased was about 66 years of age, and was known in the yachting world for his experiments on the construction of yachts on the principle of his well-known Kalafish. G. O. M.

DOMESTIC CORRESPONDENCE.

SOLAR SYSTEM.

Matter, besides possessing its qualities and properties, exists in the solid, liquid, gaseous and fourth or *single atom* states. The sun emits a compound ray of carbon and hydrogen in this state not in direct rays but in the form of a slightly-spiral shaped figure eight, whose outward and downward rays pass between the orbits of Saturn and Uranus onwards and upwards, lapping over and around the planets of Neptune and Uranus, causing the retrograde motion of both planets and satellites when they again dip downwards and homewards toward the sun, thus forming one vast globe of light and heat, the matter of which is not cast into space, but returns, carrying with it the cosmic matter of other worlds as food for the *strata* of *chlorine gas* enveloping the sun, by which it is burned, causing *light*. The hydrogen is the reflecting ray and *reflects* the sun's light in daytime as it does that of the moon, planets and stars at night, as well as the cosmic matter revealed by the spectroscope. The carbon ray is the dynamic, for I hold that *all force*, from the *vis-nervosa* of the most insignificant insect to the most powerful steam engine, is *carbon*, and that this carbon may be either positive or negative potential and when *Kinitic* is *heat*. Thus the sun's rays are not the *direct* luminous particles of Newton or the stagnant etherial fluid of more recent philosophers. Tides are not the result of the sun or moon's *attraction*, but the rays absorbed by the moon relieve the pressure on the earth's surface the width of its track, when, pressure on all other sides being equal, the liquid matter is elevated as seen in new and full moons, the direct and returning rays in decussating

each other leave a triangular space on both the eastern and western horizon, over which the pressure is not equal to the surrounding, and causes the daily tides. It will be seen on a study of these spiral-shaped figure eight rays that at the equinox the direct and returning rays are equal in pressure over an equal area of the planets' surface, and by their spiral curvature give the inclination to the planets' axis, their diurnal revolution and gradual rotation of the four seasons during which the direct are not equal to the return rays, and in this preponderance of force the planets are gradually pushed toward the sun as on the 21st of December, where the rays again battle for the supremacy, when during the preponderance of the direct rays the planets are again repulsed to the other extreme, as on the 21st of June, all of which I hold to be the result of the *force* of the direct and returning rays and *not* the *mythical law of gravitation.*

SIGMA.

BOOK REVIEWS.

THE FORMATION OF POISONS BY MICRO-ORGANISMS. A biological study of the germ theory of disease. By G. V. BLACK, M.D., D.D.S. Published by P. Blackiston, Son & Co., Philadelphia.

This little book of 170 pages requires in this journal only mention of the topics discussed by it, as the article by Dr. Black published in number eleven of vol. iii, has already given the gist of the most original portion, and in regard to it the readers can judge for themselves.

The first half of the book gives a historical review of the germ theory of disease. It describes each important discovery and the methods of research adopted by each investigator. The last portion has been presented to our readers in abstract in the paper read by Dr. Black before the section on Practical Medicine and Materia Medica of the American Medical Association.

In the book before us four chapters or lectures are devoted to the consideration of the formation of poisons by micro-organisms. The first two treat of digestion and molecular changes incident to vitality; the third of the waste products thus developed and of their nature; the fourth of the poisonous nature of the waste products of bacterial growth. A short appendix is devoted to dental caries.

FIFTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF ILLINOIS. 1883. Cloth, 633 pages.

This report contains: Abstract of proceedings at the meetings during the year 1882; medical laws and institutions of the United States and Canada; small-pox epidemic, 1880–82; vaccination in Illinois; Proceedings of the Sanitary Council of the Mississippi Valley; mortality statistics, and many other matters collateral to these general topics.

Several minor points are worthy of note. In this report the value of the immigrant inspection service of the National Board of Health is clearly demonstrated. The questions used for the examination of candidates for licenses by the State Board, clearly show the impropriety of such examinations being conducted by other than practical teachers in medical science. In justification of this criticism we quote the following:

What chemical elements are contained in pure grape sugar not found in cane sugar? A catch question and not justifiable in an examination. Give the therapeutic uses and applications of aqua *fluvialis* or *fontana?* These terms are not in general medical use. We will suggest answers to the following questions: What is meant by "a qualified prognosis?" Ans. A confession of ignorance. How would you recognize the cancerous cachexia? Ans. By the diagnosis of cancer in an anæmic patient. When are mammary abscesses salutary? Ans. Never. What are the chief causes of an excessive mortality and their remedies? Ans. War, pestilence and famine. The remedies are chiefly prophylactic—Statesmanship, properly enforced sanitary regulations, and good crops. What precautions—other than for the safety of the subject—would you observe in the exhibition of an anæsthetic, and why? I should place my property in my wife's name to avoid the possibility of a suit for malpractice.

W.

MINUTES OF THE SIXTEENTH ANNUAL SESSION OF THE NEBRASKA STATE MEDICAL SOCIETY, held at Omaha, Nebraska, May 13 and 14, 1884. Cloth, 357 pages.

Judging from the official report of the proceedings this must have been a spirited and interesting meeting.

It is to be regretted by the profession at large that Dr. James Carter's vigorous paper, the report of progress in practical medicine, pathology and special therapeutics, was cut by striking out his remarks on the ethics of the doctors of Omaha, for the free discussion of all questions of ethics is the best mode of maintaining the purity of the profession.

The numerous cases reported and the free expression of opinion on the part of practitioners gives the proceedings their chief value as medical literature.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF MISSOURI at its Twenty-sixth Annual Session, held at Jefferson City, Mo., May 15, 16 and 17, 1883. Paper, 262 pages.

Among the minutes we observe a resolution setting forth the benefits of a National Board of Health to the States in the valley of the Mississippi, and requesting the representatives in Congress from that State to secure the continuance of said Board.

The essays and discussions occupy over 200 pages of the volume. There are scattered through the whole many interesting papers and medical and surgical facts. We may be pardoned for calling special attention to the following:

The Elastic Ligature, Jequirity Ophthalmia, Glaucoma, Report on a case of Rhinoplasty, Electricity in Skin Diseases, Therapeutics of Ergot, etc., in the Reduction of Spleen and Fibroids, Vaginismus, Volvulus, Injuries of the Head, with Report of Cases.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF TENNESSEE AT ITS FIFTY-FIRST ANNUAL MEETING. Paper, 139 pages.

It is greatly to be hoped that the society will be successful in its attempts to protect the public in that State from the outrages of quacks by appropriate legislation.

MISCELLANEOUS.

NEW INVENTIONS.—A NEW HYPODERMIC CASE.

Dr. J. H. Parkinson thus describes in the *Pacific Medical and Surgical Journal*, what he calls the "Bijou Hypodermic Case," as manufactured to his order by Messrs. Geo. Tiemann & Co., of New York.

The case is of nickel, the metal being of a sufficient thickness to stand a very considerable amount of violence. In shape it follows the rectangular figure, the corners being rounded to prevent its injuring the pocket, or other contents which it may come in contact with. The dimensions are, length, 2¾ inches; breadth, 1⅜ inches; thickness, ⅝ inch. On opening the box, which is fastened by a strong spring catch, nearest the front is a glass silver-mounted syringe of 20 minims capacity, graded on the piston-rod, the button at the end of which is slightly concave for the thumb. A small silver cap slides on the nozzle of the instrument, and limits the evaporation from the piston. Forty-eight hours' disuse will (in California) in the unprotected syringe as a rule, render the most effective piston unfit for service, without a troublesome preliminary soaking. On each side of the syringe held in small brass clips, are the needles, two in number, one inch in length, very finely made, and of steel. These, like the air cap, slide on the nozzle, and being ground to an accurate fit dispense with the troublesome and complicated screw and leather washer arrangement. At the back of the case is the addition for which he claims credit. In place of the small 2 dr. vial, which usually accompanies this pattern, is a small silver box, two inches in length, $^{4}/_{8}$ inch in breadth, $^{7}/_{32}$ inch deep anteriorly, and $^{5}/_{32}$ inch posteriorly, so as to accommodate itself to the rounded edges of its containing case, the lids of each opening in the same direction. The space internally is divided by small transverse partitions into nine compartments of uniform size. In these compartments are the pellets, the number varying with their bulk, and ranging from five to twelve. The names and strength are printed on a small slip of paper attached to the outside of the lid, and correspond to the space immediately beneath. When the compartments have been filled with the discs, so as to leave a clear space ⅛ inch between them and the lid, the vacancy is packed with absorbent cotton to prevent friction and consequent disintegration. In the bottom of the case, immediately in front of the pellet box, rests a small silver tube containing wires for the needles, and above it fits a Fisher's iris forceps, which enables the smallest discs to be readily and easily extracted from their compartments, whilst the round extremity is of service in crushing them to promote their readier solution.

The list of pellets as carried by Dr. Parkinson, comprises ⅛ gr. morph.; ⅙ gr. morph., with $^{1}/_{180}$ atropia; ¼ gr. morphia, with $^{1}/_{150}$ atropia; ⅓ gr. morph., with $^{1}/_{120}$ atropia; ½ gr. morphia, with $^{1}/_{60}$ gr. atropia and $^{1}/_{60}$ gr. strychnia; ⅛ gr. pilocarpine; $^{1}/_{20}$ gr. apomorphia.

OFFICIAL NOTICE.

ANNUAL DUES from members of the Association—*Five Dollars* per annum—are payable directly to the Treasurer. Such payment entitles them to receive the JOURNAL of the Association for one year.

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THE INDEX to the 33 Volumes of Transactions will be forwarded, postpaid, on receipt of *One Dollar* by the Treasurer.

According to a resolution passed May 9, 1884, at the Washington meeting, continuous payment of Annual Dues is required, to retain permanent membership.

RICHARD J. DUNGLISON, M.D.,
Treasurer.
Lock Box 1274, Philadelphia, Pa.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT UNITED STATES ARMY, FROM SEPTEMBER 13, 1884, TO SEPTEMBER 19, 1884.

Caldwell, D. G., Major and Surgeon, granted leave of absence for 1 month and 20 days, to commence about Oct. 15, 1884. (S. O. 95, Hdqr's Div. of the Mo, Aug. 16, 1884.)

Cronkhite, Henry M, Captain and Assistant-Surgeon, from Dept. of the Platte to Dept. of the Missouri.

Taylor, Arthur W., First Lieutenant and Assistant-Surgeon, from Dept. of the Missouri to Dept. of the Platte. (Par. 1, S. O. 215, A. G. O., Sept. 13, 1884.)

Macauley, C. N. B., First Lieutenant and Assistant-Surgeon, assigned to duty at Ft. Sisseton, D. T. (S. O. 99, Dept. of Dakota, Sept. 6, 1884.)

OFFICIAL LIST OF CHANGES IN MEDICAL CORPS OF THE NAVY DURING THE WEEK ENDING SEPTEMBER 20, 1884.

P. A. Surgeon G. E. H. Harmon, Sept. 16, from Navy Yard, Norfolk, to Naval Academy.

P. A. Surgeon W. A. McClurg, Sept. 16, from Naval Academy to Naval Hospital, Philadelphia, Pa.

P. A. Surgeon Philip Leach, Sept. 16, from Hospital, Chelsea, Massachusetts, to the Palos.

Surgeon J. W. Coles, Sept. 16, as member and recorder of Nav. Exam. Board, and to Hospital, Philadelphia.

P. A. Surgeon E. Z. Derr, Sept. 16, to Navy Yard, New York.

Surgeon B. S. Mackie, Sept. 16, from Training ship Jamestown, to member and recorder Nav. Exam. Board.

Med. Inspector D. Knidleberger, Sept. 18, from Hartford, sick.

P. A. Surgeon S. H. Dickson, Sept. 19, permission to leave United States.